EDITORIAL

DOMESTIC ENGINEERING

Whole No. 1441 CHICAGO, JULY 24, 1920 Vol. 92, No. 4

"SANITATION" IN SUMMER RESORTS.

IT is amazing what people from the city will put up with in the way of "sanitary" facilities in summer resorts and pay good money for the privilege of doing so. At the present time it is difficult, around the inland lake resorts of the Middle West, to get weekly accommodations under $25 for adults, and when a family goes along, the best part of a $100 is spent for the week. And what do people get? Old-fashioned wash bowls, water jugs, indifferent water and the unspeakably, filthy insanitary privy. 'Tis true that people, going to the country, get a change, but what a change from the convenience of the city! Privies should be condemned by state law as a menace to the health of residents and visitors.

Profits for Owner and Plumber.

If these conditions were changed, there would be money in it for the resort owner and the master plumber. Unless the plumber gets busy among these prospective customers, the mail order house will profit. This was illustrated last year when the writer visited a Wisconsin inland resort. Its one sanitary feature was modern toilets properly flushed. There was no running water in the cottages, though. The proprietor of this place stated that he would make about $6,000 during the season. He had bought his plumbing and heating material, including that for his home, from a mail order house and installed it himself. It would be rare to find a city man, making a profit of $6,000 in a few months, installing his own plumbing and heating apparatus.

Field for Diversified Equipment.

The plumbing and heating contractor in business near such resorts should make himself known to their owners and persistently solicit their business. Beforehand he should prepare strong arguments about the advantage of having modern plumbing and how the owner can cash in on it by advertising to city folks that they need have no fear of visiting his place. People will pay a better price for home comforts in summer resorts, and in that way it won't take long for the owner to get back his investment. The owner's real opportunity for profits, as in all other enterprises, is in repeated business, and this is bound to happen when the plumbing is right.

To the wide-awake plumber, this field offers sales of pumps, plumbing and fixtures of all kinds, bubbling fountains, electric lighting plants and other equipment that can be sold at a profit.

THE PLUMBER'S ATTIC.

THERE is no less inviting place in a house than the average attic. It is a veritable junkshop. Things that have seen more or less service or are about ready for the discard are thrown in a corner, with the expectation that some day they may come in useful, but anyway, they are out of the way.

It is a strange thing that many plumbing and heating contractors treat the back of their shops just as they do the attics at home, only they go one step worse by throwing good things there, as well as bad. They permit their journeymen to throw valuable tools, pipe and fittings carelessly under benches and in corners, to be left there indefinitely and to be picked up leisurely and with more than passing profanity, occasionally. The value of this equipment transferred into dollars and cents often makes quite a sum, and one could readily imagine what a grand and glorious rush there would be if that particular amount, in actual money, was lying on the floor. Yet this condition of neglectfulness is tolerated by many shops year after year, and it is most unprofitable.

Make All Departments Pay.

No business can function efficiently if one department is neglected. This was brought out emphatically in the April 6th issue of "Domestic Engineering", the slogan of which was "The back of the shop needs watching". Many contractors have told us that this was one of the best issues ever published by "Domestic Engineering". It's good to hear such appreciative comments, because we know that those who said them profited by what they read. There are many others who can do likewise.

If the back of your shop needs fixing up, turn to your files and read this issue carefully. If there aren't sufficient suggestions for your particular needs, tell us what they are and we'll try our best to help you.

Heating contractors will profit by starting an early campaign for remodeling old heating plants. That coal is high and delivery of new equipment is uncertain should make customers order such work now.

How Can Plumbing *and* Heating Contractors Best Overcome Mail Order House Competition?

For Best Letters on This Important Subject "Domestic Engineering" Offers $50 in Prizes: First Prize, $25; Second Prize, $15; Third Prize, $10—Judges Will be Announced Later —Send in Your Ideas and Experiences

HOW can plumbing and heating contractors best overcome mail order house competition? This is one of the biggest questions before the plumbing and heating trade today, because the inroads of the mail order house are not being confined to the rural districts. This competition is getting stronger in the larger cities, where large advertising space is being used in local newspapers, urging the home owner "to be his own plumber"—"to dispense with two-dollar an hour labor"—"to do his own work as good as any experienced journeyman plumber or steamfitter can do it"—if he believes what he is told in these advertisements, a sample of which is shown on the opposite page.

Educating the Public.

How can this propaganda be offset by plumbing and heating contractors? Can it be done effectively, individually, or should the matter be taken up actively by the local and state association? Should mail order house advertising be counteracted by advertising in local newspapers, by the association, pointing out the danger of handy-man plumbing, that plumbing must be installed according to law, and that the only proper, sanitary and efficient plumbing or heating work can be accomplished by men qualified to do the work by experience and examination? Should the public's attention be called to the fact that the reason that America is far ahead of the world today in sanitary and heating facilities is due to the untiring efforts of the plumbing and heating trade and that the handy man or mail order house has had no hand in the development of the industry and the maintenance of the health of the country?

Has the Plumber Been at Fault?

These are facts that are before the trade today. Plumbing contractors for a long time have deplored the conditions that are confronting them. Department stores, hardware stores, even ten cent stores, are selling varieties of supplies that formerly were handled exclusively, and rightly so, by the plumber. Many shops have discontinued handling certain supplies, finding it unprofitable, because of cut prices in other competing establishments. Some may say that the plumber himself has been responsible for this latter condition, because he has not protected himself by having good window displays and conducting a merchandising business as well as a contracting business. In other words, he has made it easy for the other fellow to cut into his game by not watching out for his own interests. Nevertheless, the fact remains that millions of dollars are being spent every year for plumbing fixtures, accessories, trimmings, etc., that do not go into the pockets of master plumbers. How can they get it, is the big question before the plumbing and heating trade today.

Fifty Dollars in Prizes for Best Letters.

"Domestic Engineering" is offering the sum of fifty dollars in prizes for the three best letters on this subject. It is the hope that the trade at large will take an active interest in this discussion, in order that the best ideas may come out on how to meet mail order house competition in the most effective way. Only by free and wide discussion can the trade benefit.

Those who have faced mail order house competition and have succeeded in overcoming it, are particularly well qualified to contribute their experiences and ideas. More than one shop has found it effective to purchase plumbing and heating materials from the mail order house and set them up on the floor of their showroom. When the customer has asked for quotations and kicked on the price, mentioning how much cheaper he can buy it from the mail order house, quality for quality, he has been taken over to the mail order display, where he has been shown and told the difference. In the large majority of cases this method of overcoming mail order house competition has been successful. It may be argued that if every plumbing and heating contractor followed this scheme, that the mail order houses would reap a mighty nice profit on its sales to contractors. If you do not agree with this method, then, what do you suggest to take its place?

Liberal Use of Newspaper Advertising.

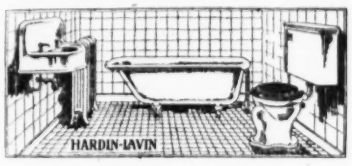
Mail order houses know the value of attractive catalogs and large newspaper advertising. The ad reproduced herewith occupied nearly a full page and has appeared in Chicago Sunday newspapers several times in recent weeks. We do not profess to know what results have been accomplished, but it needs no stretch of the imagination to believe that it must have drawn hundreds and thousands of dollars into the coffers of the advertiser, from city and country customers. The advertisement is a direct slap in the face to the plumbing and heating profession and is bound to

appeal to the man who has been led to believe that the plumber is a robber and well left alone. The prospective buyer is told that doing this work is "astonishingly easy," and that if he cannot do it "he can turn it over to some handy man"—anybody but a master plumber employing journeyman plumbers who know their business. As a follow-up campaign of the continued slaps at the plumbing ation by a committee of competent men in the trade who will be asked to pass on the merits of each contribution. You may have the good fortune to win the first prize of $25, the second prize of $15, or the third prize of $10.

Give the matter your careful thought and let us know "How plumbing and heating contractors can best overcome mail order house competition."

SAVE ½ INSTALL YOUR OWN PLUMBING and HEATING BY HARDIN-LAVIN EASY METHOD

CUT your present estimates in half when you're figuring the costs on your plumbing and heating equipment. Do the work yourself—it's astonishingly easy—or turn it over to any handy man. Almost no tools needed—No plumber or fitter on earth can put in a better or finer looking job—No wiped joints—No difficult lead work—No two-dollars-an-hour labor—No costly repair work needed later. Call on us or send a rough sketch of your building with dimensions and our planning department will work out detailed but simple directions that any one can follow. Our low wholesale prices will give you a new idea about the cost of plumbing and heating equipment.



Everything You Need in Plumbing and Heating Materials at 25% to 50% Less

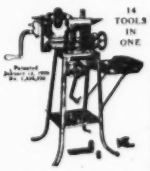
HEATING plants complete, supplies, bathroom outfits, sinks, closets, laundry tubs, lavatories, basin bowls, pipe, fittings, valves and all other materials needed for such equipment is standardized by us to conform with our **new, easy method.** We manufacture a large percentage of the goods we handle and can please you in a wide range of styles and finishes from the modest designs of plain utility to the extreme of the artistic and luxurious.

IF you can do so, it will be well worth your while to call at our factory display rooms, where you can see for yourself the surpassing excellence of these materials and make your own comparisons with others that have been offered you at prices 25% to 50% higher than ours. Bear in mind that everything we handle is covered by a guarantee that assures you the utmost in service, the most attractive designs and thorough, unqualified satisfaction throughout. Our big Handy-Man Book, included free with the first order, will enable you to do all the work yourself at only a fraction of the ordinary cost.

SEND ONLY $5 AND WE WILL SHIP THE

Handy-Man Outfit

Complete Repair Shop in One Machine



THE Hardin-Lavin Handy-Man Machine Outfit is 14 tools in one. With it you can handle practically any job in the home, garage, repair shop or on the farm. It is a 3-speed drill press, powerful machinist's vise, 3-speed reaming machine, general-purpose vise, heavy removable anvil, 3-speed emery grinder, joiner's press, tool steel cutting hardie, iron shaper, pipe vise for pipe up to 2 inch, iron or pipe bender, 3-speed blast forge with cast steel 13x15½ inch forge pan, etc. You need the Handy-Man Machine Outfit every day, and we're so sure you'll want it that we'll take all the risk. **Send us only $5 and we'll ship to your address.** Examine it in the freight office, and if you don't say it's the greatest machine of its kind in years, and the best "buy" you ever saw, order it returned and we'll immediately refund your $5. But if you want it, pay the balance, plus freight charges, and it's yours. Weight about 160 pounds. Height 3 1-2 feet. Price $30 complete.

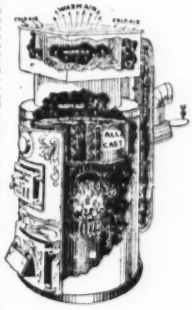
Heating Plants at Wholesale Prices

HOT WATER, Steam or Hot Air can be installed under our CUT-TO-FIT Method by any one at a very considerable saving in the cost of all material and a very decided saving in expense for labor. Our own experts do all the skilled work on your plant, which comes to you complete. Every part is shown on a plain, simple working plan. All large pipes are cut to fit and threaded, ready for assembling. With our simplified working plans any handy man can easily install his own hot water or steam heating plant in this new, inexpensive, easy way.

Cut-to-Fit Heating Plant

FROM our tremendous stock we are able to choose just the piece or part that is needed at every point in the system. Thus eliminating costly but worthless scraps of material. There are no threads to cut and no other heavy work is required. Call at our plant or send a sketch or plan of your building from which we will gladly make an estimate of the total cost based on wholesale prices, of all the material you will need, giving you a list of this material and the necessary tools, which we will lend you.

The Hardin-Lavin Pipeless Furnace Cuts Installation Costs and Fuel Bills



THE Hardin-Lavin all-cast Pipeless Heating Plant is adapted for the bungalow or home. The two large registers—used not return pipes in back take the cold air from the outside of floor register, down to bottom of system. It then passes through our improved humidifier and around the outer corrugated firepot. Then through the oversize, large cast radiator, being thus modified and heated throughout its course of travel. It is then forced to all parts of the home, compelling the cold air to return and keeping a constant stream of fresh humidified warm air in circulation to all parts of the home.

Note—On ordinary pipeless furnaces the cold air is taken from inside of the outer casing. This, being separated from the heating chamber by a thin sheet iron partition, which is constantly hot on one side and cold on the other, eventually will warp and crack, permitting smoke and gas to enter the home and hindering circulation.

Cut to Fit—Easy to Install

OUR patented adjustable throat will fit any height basement. Specifications: Base plate is in one piece cast. Ash pit is all cast, large and deep. Grates are extra heavy, air distributing, cradle lining rocking and dumping type and will burn any kind of hard or soft coal efficiently. Firepot is heavy, cast in two sections, corrugated on and out. The upper feed section is heavy cast, corrugated in and out, and made with drop out sections. The water-tight all-cast two-piece dome has the longest fire travel possible, with clean-out front and rear. Casing is double constructed. This heavy ornamental front and machine fitted door and frame and durable, compact humidifier, poker, shaker, controlling dial complete, so that drafts and heat can be controlled from the home without going to basement. We have hundreds of satisfied users all over the country. We guarantee that this **new heating system** will give entire satisfaction.

No. of System	Diameter of Fire Pot	Floor Register	Heating Capacity	Net Price
320	20 in.	22x24 in.	4 or 5 Rooms	$126.00
322	22 in.	24x27 in.	5 or 6 Rooms	145.00
324	24 in.	30x30 in.	6 or 7 Rooms	175.00

Call at our plant when in Chicago and see our complete COUNTRY HOME EASY-METHOD Plumbing and Heating Systems. Our low prices will surprise you.

Our Handy-Man Book

Makes Every Man His Own Plumber and Fitter

YOU can do your own work by following the simple, easily understood directions in our Handy Man Book. It assumes that you know nothing whatever about plumbing and heating work and tells you every step "from the ground up." Every man who likes to work with tools, to "tinker around the house"—every man who likes to make his dollars go to the absolute limit—should own a copy of the Handy Man Book. Contractors, engineers, property owners, farmers, and many others will find in the Handy Man Book a veritable mine of useful, practical information.

THE Handy Man Book shows and thoroughly explains hundreds of practical floor plans, diagrams, elevations, and other technical data which perhaps you've never understood before. Plumbing, heating, water supply, sewerage, septic tanks, together with other similar systems and appliances are all treated by the Handy Man Book in a plain common-sense manner, accompanied by EASY WAY SUGGESTIONS that will save you many an hour and many a dollar in installing and repairing your own plumbing, heating, and water systems.

HUNDREDS of rules, clever "kinks" of the trade, tables, and plans are provided. Instructions on the care of plumbing and heating plants. How to lay out work in a way that will save material. How to get the utmost efficiency from skilled and unskilled labor. How to learn in advance what your plumbing and heating will cost. All this is shown in detail, together with more than 8000 features, systems and supplies, accompanied by contractors' special wholesale discount sheets.

Handy Man Book Saves Material and High Priced Labor

IT shows many bath room outfits, bath tubs, lavatories, toilets, sinks, shower baths, bath room accessories, drinking fountains, urinals, heaters, water supply systems, hot water and steam heating plants, pipeless and hot air heating systems, plumbing and heating repairs, and many other supplies too numerous to mention. Besides being our wholesale catalog, it shows and explains our NEW CUT-TO-FIT method and adjustable connections. Any handy man can install his own plumbing and heating plant this NEW INEXPENSIVE EASY WAY. Even if you are a plumber, the hard work and unnecessary material saved will surprise you. It is a revelation to the most experienced contractor.

With Each Handy Man Book Goes Our Helpful Service

AFTER you receive our big book, we mail you supplements free from time to time as new plumbing, heating, and builders' equipment is perfected. We also mail you our wholesale discount sheet, applying to the big book, when you request it to keep you posted on prices, and we help you select the best and easiest method plumbing outfit, water supply system, pipeless or hot water or steam plant, and make simplified installing plans best suited to your building. In fact, we help you in every step you take from start to finish—This free, helpful service is as valuable to you as the big Handy Man Book.

Send 50c for your copy today and it will be mailed parcel post prepaid, which amount will be refunded on your first order; or, if you are not more than satisfied with this *instructive book* and the *helpful service* that goes with it, return it and we will refund your money plus the postage.

HANDY MAN BOOK COUPON

Hardin-Lavin Co.
40th St. and College Grove Ave., Chicago

Enclosed find 50c. Please send me the HANDY MAN BOOK, with special wholesale prices. Also give me your free, helpful service from time to time as I need it. I am to get my 50c refunded on my first order, or upon the immediate return of the book.

Our $500,000 Plants and 40 Years of Business Integrity Behind Our Guarantee

profession by so-called humorists and artists, it works out very profitably for the mail order house.

Now Is the Time for Action.

It is time for the plumbing fraternity to talk to the public. Simply ignoring the issue is not the remedy. The public needs to be educated and it will take money to do it, but it will be money well spent.

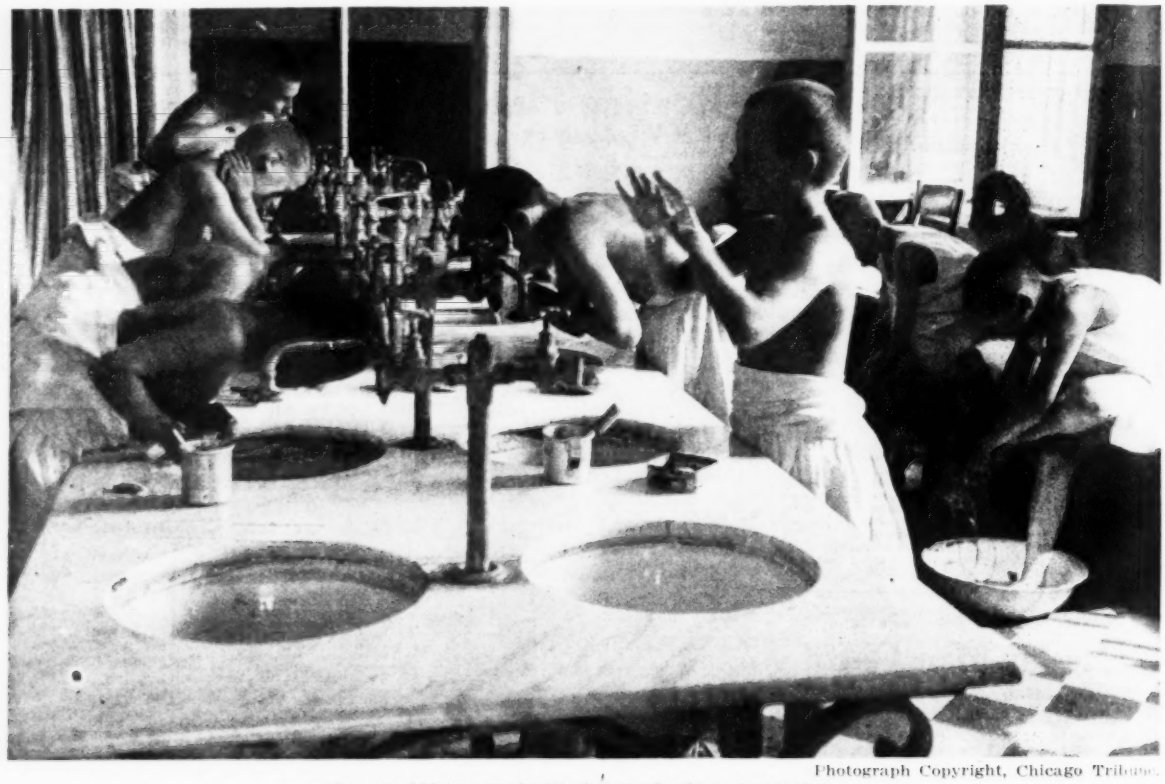
Write to "Domestic Engineering" and state your opinion on the matter. Your letter will be given every consider-

The Wall Street Journal recently stated that according to J. F. Townsend, traffic manager of the National Tube Co., 1,000,000 freight cars should be added to the equipment in the next five years.

A reduction in the price of bituminous coal was confidently predicted by members of the sub-committee of railroad men and coal operators who held a meeting this week at the office of the Pennsylvania Railroad in New York City.

SANITARY FACILITIES FOR THE NATIONALIZED CHILDREN OF SOVIET RUSSIA.

More than half of the boys and girls in the large Russian cities and towns have been taken from their homes and are now living in groups in the state institutions. Their mothers like it, Mme. Kollontai, head of the department of child welfare, told John Clayton, of the Chicago Tribune's foreign news service, recently in Moscow. This photograph, taken at cleaning up time in one of the homes, shows the systematic way in which the use of soap, water and tooth brushes is taught. The plumbing fixtures shown in this picture will be of interest to the trade in this country, particularly the use of swinging faucets of the shower type, with cross handles, and the wash bowls in battery



Photograph Copyright, Chicago Tribune.

Russian Children in the Washroom of a State Institution.

form with the old familiar marble top. Whatever has been said against Soviet Russia, it is creditable, however, that these youngsters are being taught the fundamentals of good health and given the opportunity to practice them. The story of Russia constitutes one of the darkest chapters in history. It was the policy of the Romanoff regime to hold the common people back instead of educating them, and this contributed to the downfall of the country. Trotzky, the former New York newspaper man, took some ideas to Russia besides those pertaining to Bolshevism. He knows what sanitation has meant to America, and if he really has the interests of the Russian people at heart, he can do them no greater service than to thoroughly modernize the country from the standpoint of proper plumbing facilities, in homes, factories, and wherever else they are needed.

William Wilby, Selma, Ala., has secured the plumbing and heating contract on the Le Mar apartment house, being erected there. This building will have thirty-nine apartments, and the contract amounts to $35,000.

NEWS OF THE WORLD.

An attack upon the Merchant Marine Act of 1920 as an unfair discrimination against foreign shipping lines as legislation certain to bring retaliation from them and from foreign governments is contained in the current issue of "Japan," a magazine published in San Francisco under the control of the Toyo Kisen Kaisha. Copies of the publication have been received by shipping men in Washington and are considered to represent the attitude of the Japanese interests. The editorial states that one effect of the law when put into operation will be a shifting of trade from the Pacific Coast to the Gulf and Atlantic coasts. Section 28, providing for a preferential rail rate on exports and imports in American vessels is the chief point of attack. The probability that foreign shipping lines will move their offices from American to Canadian ports is also given considerable mention.

Jose G. Guerra, deposed president of **Bolivia,** with a number of his ministers and other officials of the overthrown government, were deported this week by the new regime, the State Department was informed in the first dispatch from the American legation at La Paz since the revolution. The dispatch reported that W. Duval Brown, American consul at La Paz; American Trade Commissioner Schurts and other representatives of the diplomatic and consular crops at the Bolivian capital had left the city with the former president. Other dispatches state that the revolution was a surprise to the officials.

In a formal reply to the Trade Union demands that British troops be removed from Ireland, the Irish Secretary has stated that the attitude of the labor party is due to a misconception of the actual functions of the troops which are not that of occupation, but to assist the civil power and the police in preserving order.

BUILDING UP YOUR MAILING LIST

Suggestions on Getting Desirable Lists of Names and Keeping Them Up to Date

By J. K. Novins

EVERY dealer, no matter what line of business he is engaged in, sooner or later faces that most important problem in retailing—how to get the most out of the sales possibilities of his particular territory.

The progressive merchant is not content to let his thriving business sleep on its present prosperity. He knows that sooner or later he will have to attract a new clientele, so to speak, to keep pace with the growth of his establishment, and he must replace those customers that have drifted from his control.

The dealer must utilize every possible resource at his command to build up an intelligent list of live prospects. The list is to be used for follow-up letters and for other literature, such as announcement of special sales and other events.

Mailing List Safeguard Against Mail Order House.

A perfect mailing list, deplete of "dead wood," and carefully prepared represents the purchasing capacity of the community in which the dealer conducts his business, and forms his goal for future business. It is the best safeguard against the encroachments of the mail order house.

Every progressive dealer realizes the importance of a workable mailing list, but his chief problem is how to keep his list constantly up to date, with additional "live names." Another problem he is constantly up against, is how to classify the prospective customers according to their respective purchasing needs and capacities.

It is the purpose of this article to outline a number of methods employed by progressive business men in various parts of the country, methods which have resulted in good mailing lists. A number of these are passed on to the readers of this publication in the hope that they will be aided in compiling lists suitable for their own use and profit.

The first thing to take into consideration is that there is no limit to the sources from which the dealer may obtain good names of prospects in his territory. No city or town is too big or too small to limit the dealer's ingenuity in discovering new sources for names. By looking around and keeping eyes and ears wide open the dealer can discover sources that have been neglected by his competitors, and even by the large mail order houses.

In compiling a list, a dealer has the opportunity to exercise a great range of ingenuity and considerable foresight and judgment.

Getting Names from Newspapers.

A common source for live prospects that some dealers neglect almost entirely is the daily or weekly newspaper. A number of progressive dealers, known to the writer, have made excellent use of this source in building up their mailing lists. One dealer keeps a systematic file of newspaper clippings, especially those which give the names and addresses of residents of the particular community. In the small city or town the local newspaper is an especially good source. Names of local residents count a great deal more with a small town newspaper than with a metropolitan daily, and the names are generally spelled more accurately than in the big town newspaper.

Generally speaking, the dealer can determine the social and financial standing of a resident of the town by a perusal of the local newspaper recording the meeting of a society of which the prospect has been elected an official, or items to the effect that John Smith had recently engaged in a successful real estate venture, or that Mrs. Mary James has increased her social activities and has formed the habit of conducting frequent sociables at her residence.

Discovering the Prospect's Prosperity.

From such almost trivial information the dealer can determine just how anxious John Smith would be to buy things for himself and for members of his family, in view of his increasing prosperity, and just how Mrs. Mary James would be thinking at the time of buying new things for herself and her home, in view of her increasing social activities.

Enterprising dealers are in the habit of watching the newspapers for announcements of association meetings, for church and school activities, for local elections, for excursions, for real estate transactions, for removals and for names of visitors to the city or town.

Armed with such names, and by using good judgment, the dealer can shape his follow-up letters so they will carry the most appropriate appeal to the people they are intended to reach. By constant reference to the newspapers the dealer can build up a pretty good list of prospects, and by using a little judgment can classify these names so as to determine the kind of letters to send them and the time to send these letters.

Leads from the Letter Carrier.

Another has been able to get up a neat little "live" list without budging from his place of business. He has made it his business to be on very friendly and intimate terms with his letter carrier. The carrier periodically furnishes the dealer with names and addresses of people on his route, giving their full names correctly—and letter carriers are reputed for this virtue—and other necessary and useful information, such as the standing of the prospect, his or her personal habits, the size of the family, the ages of the children and other interesting sidelights that can be utilized by the dealer to good advantage.

Names of Auto Owners.

Another profitable source are the records of the state and county officials whose duty it is to record the number, and the names and addresses of automobile owners in the particular community in which the dealer is chiefly concerned. This has become a very important source, not only for the dealer, but also for the manufacturer and for the mail order house. The manufacturer can gain a pretty good idea of the buying capacity of the particular territory by learning the number of automobile owners in the community. The retailer can profit even more from such information.

The fact that a man owns an automobile stamps him,

and members of his family, as a very desirable customer. For one thing it indicates the resident's buying power. The purchase of an automobile tends in the long run to raise the standard of living of the family. Traveling a good deal and visiting other homes bring a desire for new and better things for the home and for members of the family.

There is not a retailer who cannot increase his business to a large extent by catering to automobile owning families. The purchase of an automobile is accompanied by an active demand for accessories, for clothing and for a variety of other articles.

Families owning automobiles naturally travel a great deal more than the ordinary family. That creates a desire for better homes, and even for new homes. The family spending budget is automatically increased with the purchase of an automobile.

Lists of automobile owners are kept by state and county officials, and can be inspected by any citizen without charge. The names can be copied or the dealer can have copies made for him upon payment of a fee.

State and county officials are very good sources for the dealer to cultivate. We need hardly mention the records of the marriage license bureau, and the birth records of the county clerk.

Information at Tax Assessors' Office.

The tax assessor's office can furnish names of home owners in the particular community. Here is another fertile source. The dealer can determine the purchasing power of a taxpayer by the amount the latter has paid in taxes, and the regularity with which the taxes are paid.

In the small town these lists are often published in the local newspapers and can be clipped for ready use.

The dealer can also refer to the lists compiled by the election officials. These lists contain full information about the voters, the nature of their business and occupations, and such other personal details. These lists are on file, free for ready inspection. A lot of retailers have made profitable use of this source.

There are other equally profitable sources that the dealer ought to cultivate. They have been used by many with success, and that is the reason we pass them on to others.

Use Telephone Directory.

Take the telephone book in your town. Some dealers attest that the telephone book is the best source for local names. The fact that a family possesses a telephone privilege marks it as a good purchasing family. In some cities and towns, in fact, in the majority of them, the telephone companies publish classified directories. The prospects are already classified for the dealer according to business and occupation.

The telephone directory gives the dealer another advantage. After addressing a number of telephone subscribers, these can be followed up on the telephone without consequent loss of time and effort required in hunting for telephone numbers.

Public Service Corporations Can Help.

Another good source is any of the public service corporations in the community. A dealer might get a list from the local gas or electric corporation. It is not an easy source to cultivate, however, for the service corporation officials are not very anxious to expose their records to public inspection. The dealer can get good results, however, by cultivating an employe of the organization. Sometimes the dealer can get results by paying the employe a fee for his services.

It stands to reason that a family paying bills for electric lighting in the home will furnish better trade for the dealer than the family that hasn't gone further than gas illumination. A complete list of people using the electric lighting corporation service is therefore an important asset for the dealer who maks it his business to follow up prospective customers.

Likewise, the dealer can get good results from a complete list of residents carrying savings accounts in the local banks. He can procure the names of those carrying checking accounts. As is the case with the public service corporations the dealer has to exercise considerable discretion and diplomacy in order to obtain the desired co-operation of bank officials, but the results warrant special effort.

A bank list reveals a lot of interesting data about a man's or family's standing in the community and serves as an excellent gauge for judging purchasing power.

A dealer should also secure a list of families that have moved into the city or town, and the names of new business men. These can be gotten from the files of the local newspapers, or in some manner from the postmaster direct.

Advertising for Prospects.

A standard way of securing names of prospects is by advertising in the local newspapers. Dealers offer prizes to correspondents furnishing one or more names, with addresses of prospects. A lot depends, however, on the way the advertising copy is written, and the nature of the business the dealer is engaged in.

One Missouri dealer succeeds in securing a large number of "live" prospects merely by advertising in the local newspaper.

"I want the name of every person within 20 miles of this town who contemplates buying any of the articles on sale in my store," is the way the copy runs. "The one sending in the most names by July 1, 1920, will get the first prize, next highest second prize, next third prize. With each name sent in it may be stated about when party will be ready to buy, with correct name and address. Name must be sent in by mail or person—don't telephone, and when you have a name to send in don't wait, because some one else may have the same name and the one reaching me first will get the credit. Names that I already have will not count—must be new ones. Get busy."

Another method is to have school children secure names and addresses of prospects, promising one cent for each name. The school children can also furnish additional information. These names, however, can be fully checked up by other lists—such as the voting lists kept at the county office.

Exchanging Lists Helpful.

In several communities dealers have discovered a novel way of securing lists of live prospects. Especially in those communities where local rating bureaus exist, the dealers have found it extremely beneficial to exchange lists. It is the practice for two or more dealers who are not in competition with each other to agree to exchange their customer lists every now and then.

This is considered a desirable method and has worked advantageously to all concerned. The dealers are little inconvenienced in making duplicate lists. In exchange each receives a list of fine prospects, each name standing for proven purchasing power. The merchant has a good idea of the financial standing of each of the prospects, and he therefore knows how to shape the letters that are to be sent to them in order to obtain maximum results.

Of course, there are other methods, but these are to be developed by the merchant's own ingenuity. The above has been used with success by others, and there is no reason why they cannot find general application.

The Philadelphia Public Ledger states that according to plans perfected by the National Americanism Commission of the American Legion, and announced July 18th by Col. Arthur Woods, its chairman, all immigrants entering America will be received and welcomed by the American Legion members and guided "on the side of law and order."

HEATING *and* VENTILATING *a* COTTAGE HOSPITAL

The Second of a Series of Six Articles on the Installation of a Heating and Ventilating System in a Cottage Hospital

By Charles L. Hubbard

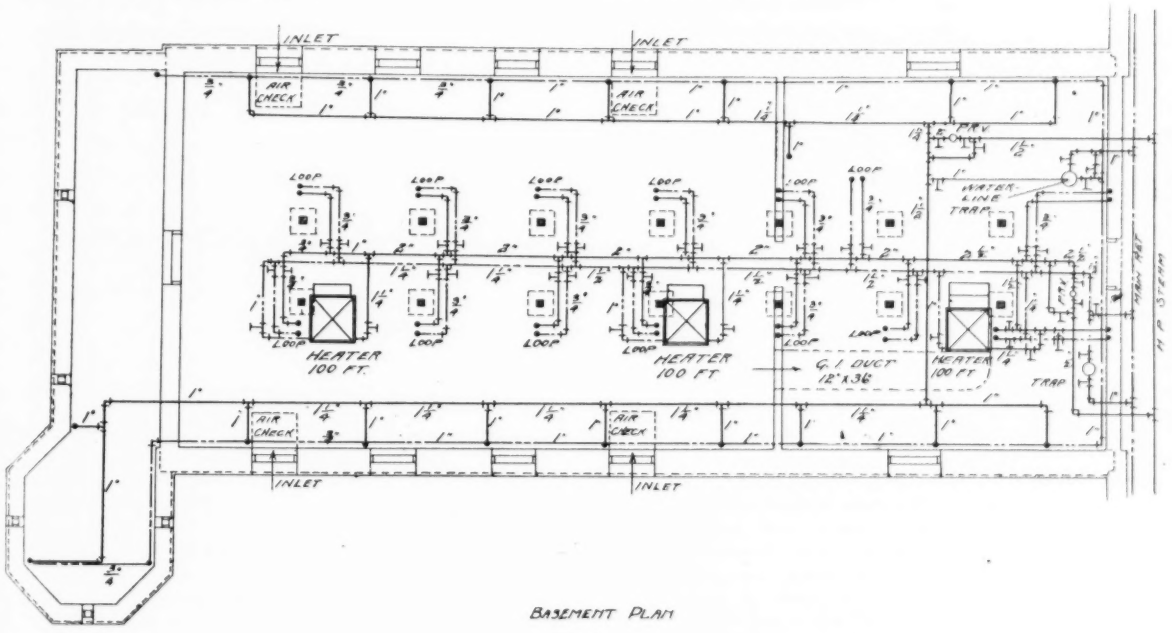
Private Wards.

THE present article takes up the heating and ventilation of a one-story ward building divided into private rooms, as shown in Fig. 2. In addition to the thirteen wards, there is a diet kitchen, bath, toilet, and sun room.

Heating by Direct Radiation.

The heating is done entirely by direct radiation, the radiators being placed along the outer walls beneath the windows, as shown on the plan.

The sun room is provided with three lines of 1¼-inch wrought iron pipe beneath the windows, connected for supply and return at opposite ends. These coils are made up with branch tees, and expansion is taken care of by carrying around a corner of the room. It is not intended to warm this space to 70 degrees, but simply temper the air so that patients can sit out at any time with light wraps. For a temperature equal to that of the wards, about double the amount of heating surface called for would be required under these conditions.



BASEMENT PLAN

Fig. 1.

The type of radiator is illustrated in Fig. 3, and is designed especially for hospital work, having extra wide spaces between the sections, to give free access for cleaning, while the surface is entirely devoid of ornamentation which would present a lodging place for dust. They are finished with enamel paint, so as to be easily wiped over with a damp cloth, the same as painted woodwork. The one-pipe system of supply and return is used, both for simplicity and convenience of operation. The radiator valves are of the angle type, nickel-plated and provided with wooden hand wheels. All air valves are automatic and piped to the basement, so there is no annoyance from dripping or unpleasant odor from the escaping air or steam.

Ventilation.

The method of supplying fresh air to the individual wards is simple in the extreme and has also been found effective in rooms of this small size. Briefly, fresh, warm air for the entire sixteen rooms is delivered into the central corridor of the building through three floor registers along one of the side walls, and marked H. A. on the plan (Fig. 2). The doors at either end of this space, connecting with the sun room and the main corridor, respectively, are ordinarily kept closed so that a fresh air chamber is formed, from which a supply passes to each room through a transom over the door. The air supply to the diet kitchen, toilet, and bath room is through louvre openings in the lower panels.

The source of air supply to the floor registers above mentioned is clearly shown on the basement plan, Fig. 1. The space at the left of the cross partition is reserved as an air chamber, the concrete walls and floor being easily kept free of any objectionable dirt. All storage is provided for in the large room at the right of the partition, which opens into the main corridor connecting the various buildings. Outside air is admitted to the chamber at the left through four special inlets, two on either side, each pair being of sufficient size to admit the full amount required at a moderate velocity of flow. This arrangement is for the purpose of taking advantage of the wind pressure whether its direction be from the north or south.

The air is kept from flowing through the basement by special checks similar to those shown in Fig. 4. These are so constructed that the air will pass in readily from the outside, but will not allow the current to be reversed.

The construction consists of a galvanized iron casing placed over the inlet window, the shape of the end being shown in the cut. The lower portion of the front, which slopes backward toward the wall, is open and covered with a wire netting. To this are wired small horizontal rods carrying flaps of canvas which close against the netting when the current tends to reverse and flow outward. The window sash is hinged at the top inside of this casing, as shown in Fig. 4, and is opened and closed by a chain and pulley attachment, as indicated.

The air is warmed to 70 degrees before reaching the corridor above by passing through three indirect stacks, made up of pin radiator sections, and hung from the basement ceiling just at one side of the floor register openings.

Two of these stacks are located in the cold-air chamber and one in the storage room at the right. They are all enclosed in galvanized iron casings and provided with mixing dampers for regulating the temperature of the air delivered to the rooms above. The two stacks at the left have the bottom omitted from the casing, so that the air can enter directly from the basement. The third stack, at the right, is closed in, and has a connection with the main cold-air chamber, as shown on the plan.

The system of discharge ventilation is shown on the first-floor plan, Fig. 2, nd consists of an individual vent flue lead from each room to the roof space or unfinished attic. The registers connecting with the rooms are near the floor, and a circulation under all weather conditions is secured by means of a steam loop of 1-inch pipe extending the full length of the flue. Although a portion of this discharge air will leak out through the roof construction provision is made for removing the greater part through a special chamber and roof vent, as indicated by dotted lines near the right-hand end of the plan. This chamber has two openings of generous size, one in either end, as indicated by arrows, and is provided with a metal pan at the bottom for catching any rain or snow which may find its way in through the roof ventilator. This pan is drained to the basement through a small pipe, and the roof vent is provided with a damper operated by means of a chain, from the first floor.

A detail of one of the flue heaters is shown in Fig. 5, which illustrates the method of making the steam and return connections. The heater is in the form of a complete loop, the lower end projecting into the basement through a galvanized iron stop at the base of the flue.

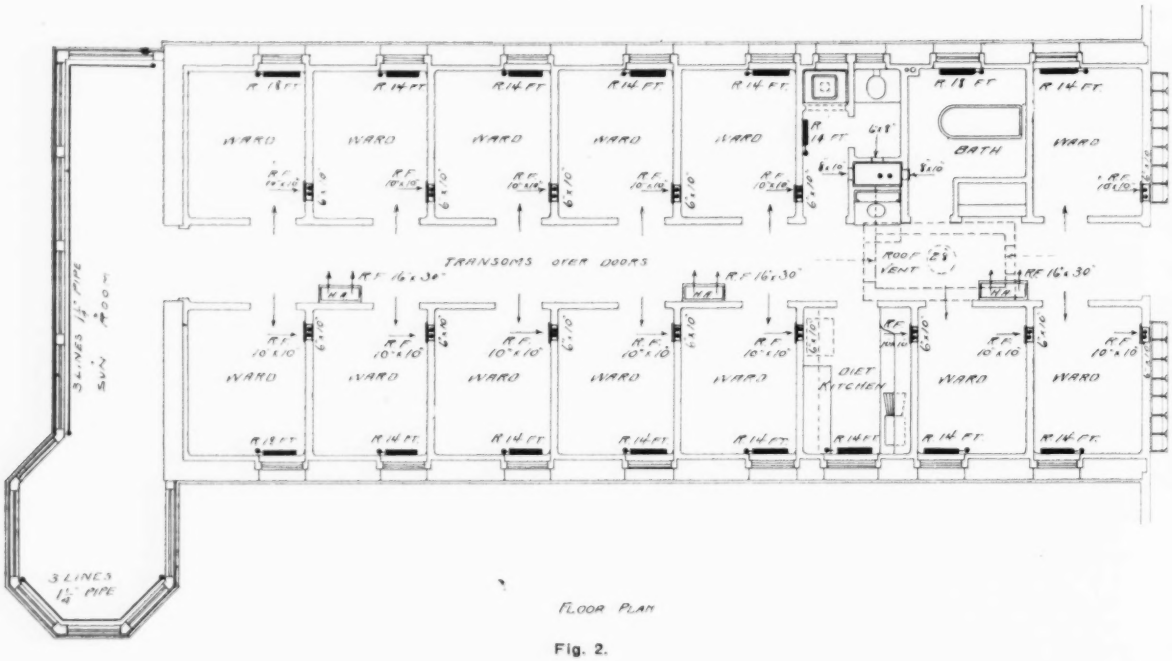


Fig. 2.

In order to produce a proper circulation of steam and prevent air pocketing, the supply and return pipes are connected with opposite sides of the loop a short distance above the bottom, thus forming a water seal, which produces a flow of steam in the direction shown by the arrows, driving the air before it to the automatic valve which is connected into the return leg of the loop just above the drip connection.

Circulation of air through the rooms, as produced by this arrangement, is such as to give a good distribution. The warm air entering through the transom passes along the ceiling toward the outer wall and becoming cooled gradually falls toward the floor and is taken off through the vent register at this lower level. The location of the radiator beneath the window tends to prevent cold down drafts and so assists in the general diffusion of the fresh air throughout the room. The discharge ventilation from the bath and toilet room is kept separate until it enters the chamber beneath the roof vent.

Piping Layout.

The general piping arrangement is clearly shown on the basement plan, Fig. 1. The direct radiation and the ventilating system are placed on independent lines, each being provided with its pressure reducing valve and trap, as shown on the plant.

In the mild weather of spring and fall the fresh air supply passing through the indirect stacks will be sufficient to warm the rooms, as well as ventilate them. These stacks are designed for heating the full air supply from 0 to 70 degrees, so that for a large part of the heating season there will be more or less surplus for warming as well as for ventilating purposes. This should be utilized as much as possible, turning on the direct radiators only when needed for supplementing the indirect.

Referring to the plan, we find a 1½-inch branch leading from the high-pressure main in the corridor to the pressure reducing valve, from which two principal branches are carried along either side of the building for supplying the direct radiators. The ends of each line are dripped into the returns, also, every other riser is provided with a similar drip connection to keep the steam lines free from condensation and insure quietness of operation, which is an essential feature in connection with hospital work.

The horizontal returns of the direct system are carried along the building walls, as shown, close to the floor, and are sealed by means of a water-line trap. The three indirect stacks and the various vent flue aspirating coils are supplied from another line, taking its supply from the high pressure main through a reducing valve, as previously stated.

The return for this system is carried overhead, as a matter of convenience, and water hammer is prevented by placing siphon loops in the return connections from the three stacks. The end of the steam line, at the left is allowed to drip directly into the return pipe without a seal and furnishes the pressure to carry the condensation back to the trap. Each vent flue coil has its own water seal, as already shown in Fig. 3.

All piping material, valves, etc., are practically the same as for the Nurses' Home, described in the first article in this series.

Piping in the cold-air chamber, at the left, is not covered, and thus serves as indirect surface. It also has the effect of keeping a layer of tempered air near the ceiling, thus preventing the floor above from becoming chilled. All piping in the storage space at the right of the cross partition is covered.

Computations.

In computing the radiation, the same method was used as already described for the Nurses' Home, the factors for transmission being:

Wall surface × 18; glass surface × 84; increased by 1.2 for leakage.

A typical room has 70 square feet of outside wall surface, and 15 square feet of glass surface, which gives a loss by transmission of

$$70 \times 18 = 1{,}260$$
$$15 \times 84 = 1{,}260$$

Total per hour 2,520 T. U.

Increasing this for leakage gives $2{,}520 \times 1.2 = 3{,}024$ B. t. u., which calls for $3{,}024 \div 250 = 12$ sq. ft. of direct radiation. In rooms having a westerly exposure this should be increased to $12 \times 1.2 = 14.4$ sq. ft. and in easterly rooms to $12 \times 1.1 = 13$ sq. ft. This amount of surface is so nearly the same that a uniform size of 14 sq. ft. has been provided for all rooms, except the two corner ones coming next to the sun room, in which the radiation has been increased to 18 sq. ft.

The bath room also has 18 sq. ft., as it is often desirable to warm this room to a higher temperature than the wards. The size of the indirect stacks is computed as follows:

Assume an air supply of 100 cu. ft. per minute for each of the sixteen rooms, which makes a total of $100 \times 16 = 1{,}600$ cu. ft. per minute, or $1{,}600 \times 60 = 96{,}000$ cu. ft. per hour. To raise this quantity of air from 0 to 70 degrees will require $96{,}000 \times 1.3 = 124{,}800$ B. t. u.

Assuming an efficiency of 400 B. t. u. per sq. ft of surface per hour for pin radiation, under the conditions of the problem, will call for $96{,}000 \div 400 = 312$ sq. ft. Three stacks of 100 sq. ft. each are used, it being assumed that the piping will more than offset the 12 ft. which we previously omitted.

For the vent flues we will assume a velocity of 200 ft. per minute, also that 20 per cent of the air will find its way out by leakage around the window, leaving 80 per cent or 80 cu. ft. to pass out through the flue. This will call for an area of $80 \div 200 = 0.4$ of a sq. ft., or $144 \times 0.4 = 57.6$ sq. in., or 60 in round numbers. These are made 6x10 in. and placed in the partitions between the studding. The register faces are made 10x10 in., which is an increase of more than 50 per cent to care for the area taken out by the fret work.

The total air to pass out through the roof vent will be $16 \times 80 = 1{,}280$ cu. ft. per minute. Assuming the same velocity of 200 feet per minute, will call for an area of $1{,}280 \div 200 = 6.4$ sq. ft., which is very close to a 28-inch ventilator, the size used.

(Continued on Page 209.)

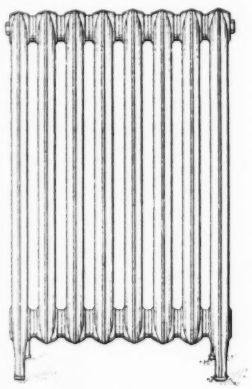


Fig. 3.

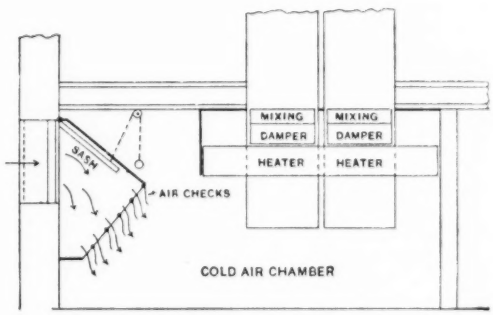


Fig. 4.

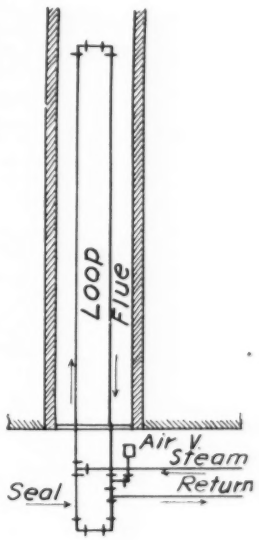


Fig. 5.

SEWAGE DISPOSAL *from* SMALL HOUSE NOT CONNECTED *to* SEWER SYSTEM

Article Prepared by Scottish Writer Tells of One Method of Handling Wastes from An Isolated Establishment

By John Y. Dunlop

Editor's Note:—What is being done along progressive lines in sanitation, and what are sanitarians thinking about, in foreign countries? The accompanying article, from a well known writer in Scotland, is published in its original form. American readers may find therein some things which they do not approve of, and comment and criticism is invited.

IN dealing with the treatment of the sewage from an isolated establishment there is very often a great amount of doubt as to the successful disposal of the sludge and liquid matter. That I think is probably due to the long use of privy middens and other such crude methods of treatment which are far from sanitary in country districts.

Recently, much has been made of the septic tank, which is a complete reversal of all the methods hitherto applied to sewage, for instead of endeavouring to arrest decomposition the object of the septic system is, as its name implies, to favor decomposition or putrefaction, and for this purpose the sewage is confined in tanks.

This remarkable discovery has no doubt simplified the treatment of the sewage for small villages and for groups of houses, but for the isolated house the cesspool is the most convenient and least expensive method of getting rid of sewage matter.

Of course, the cesspool in a crowded area is a barbarous and insanitary arrangement, but in these cases the cesspool could not be otherwise than badly placed and a great amount of the abuse which the cesspool has been subject to has been brought about by the bad construction of those receptacles.

The choice of location of the cesspool must be guided by the available land, the location of the house, the gradient of the land and above all the dip of the subsoil-strata and the position of the well or water supply.

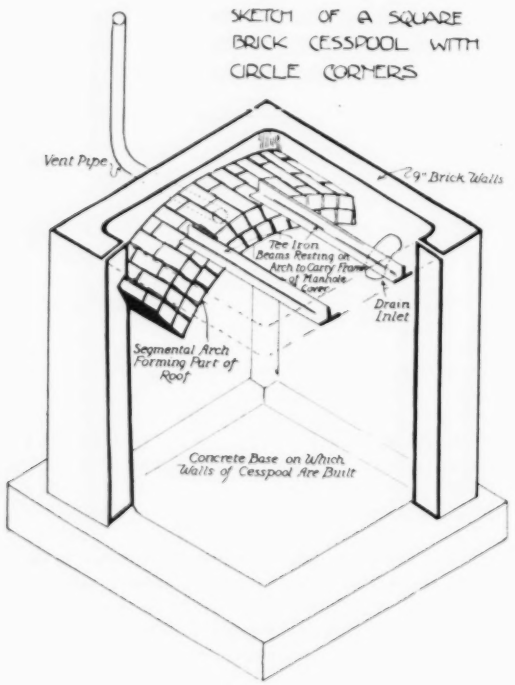

SKETCH OF A SQUARE BRICK CESSPOOL WITH CIRCLE CORNERS
Vent Pipe
9" Brick Walls
Tee Iron Beams Resting on Arch to Carry Frame of Manhole Cover
Drain Inlet
Segmental Arch Forming Part of Roof
Concrete Base on Which Walls of Cesspool Are Built

Fig. 1.

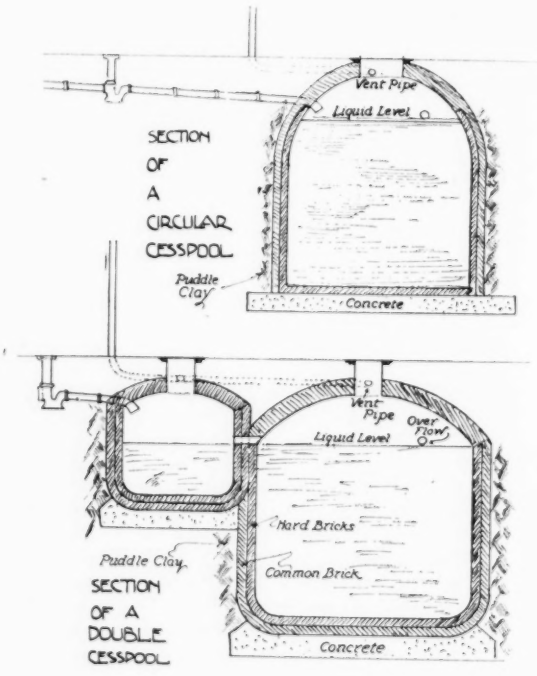


Fig. 2.

The next point is the size of the cesspool which will of course be governed by the daily quantity of the flow of the sewage and the interval of times to be allowed between each cleaning of the tank.

The quantity of flow depends on the number of persons using the conveniences and the water supply.

In families who have to draw water from the well, the amount would vary from 2 to 4 gallons per head.

For normal use with a water supply laid into the house, I believe, a safe estimate for personal and domestic use without bath would be 12 gallons per head daily.

With baths and perfect cleanliness 16 gallons should be allowed, which make no allowance for water closets or unavoidable waste.

With these observations and allowing that 6¼ gallons of sewage equal a cubic foot, the dimensions of the cesspool can be easily arrived at.

If any part of the rainfall enters the drains, the calculation will be more complicated.

Authorities on this subject say that a cesspool should be trapped and ventilated exactly in the same way as if the cesspool was a public sewer.

If there is no available land or other safe method for dealing with the liquid overflow from the cesspool, no overflow should be allowed, and the cesspool must be the oftener cleaned.

If, however, there is insufficient land but no waterway the overflow may be directed over a filtration gutter.

This is a deep trench 2 feet deep and 18 inches wide and of a length varying with the circumstances.

The trench is filled up with porous material such as builders' rubbish, old crockery and stones to within a few inches of the top, and upon this surface previously rammed walls of honeycombed brickwork are formed, provided with a ledge sufficiently wide to support a perforated tile.

The perforations should be about ⅛ of an inch in diameter. The porous rubbish reaches to within about 1 inch from the underside of the tile and the sides are planted with trees.

The gutter may with great advantage be placed on a bank with gradual sloping sides.

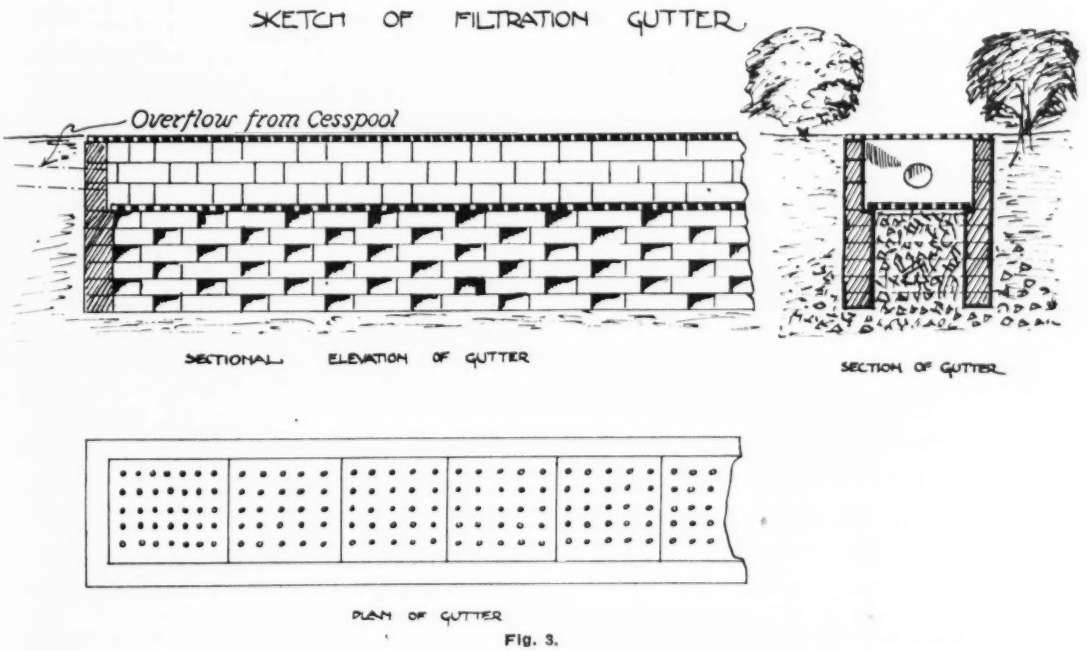


Fig. 3.

cleaned out at least every two weeks, but it is much to be feared that, owing to the nuisance and the expense of the operation, much longer intervals are allowed to elapse between the cleaning, and this is especially the case where there is an overflow from the cesspool into an adjoining turn or waterway.

In designing the shape of the cesspool it has been found that geometrically the largest area is obtained with a given amount of material by a circular chamber, and in addition to that this shape has a considerable resisting power and is more easily cleaned than one having square corners.

In constructing a brick cesspool in order to have the chamber water tight, it is a good plan to excavate the ground sufficiently wide that the cesspool can be surrounded with 6 inches of puddle clay.

It is almost unnecessary to say that it should be built of good hard bricks and should be covered with a hermetically closed door for access for cleaning and should be well ventilated.

The drains for the house should enter above the highest point to which the sewage can rise in the cesspool and be

The perforated tiles forming the bottom of the gutter are to be had in most of the brick fields. They are an important part of the system, as they retain dead leaves and other rubbish and prevent them from clogging the porous material below, besides breaking the force of the overflow from the cesspool and so preventing the downpour from the pipe from ploughing up the rubble which is a most important matter.

Where there would be objections to form an overflow into a gutter as already described, a good plan is to build a double cesspool, which means that the bulk of the sludge is retained in the small chamber while the large chamber retains the liquid which can be pumped out without disturbing the solid matter.

Of course the valuable discovery of the septic tank is a great advancement on the cesspool system.

The septic tank is merely a receptacle designed to favor the multiplications of micro-organisms and bring the whole of the sewage under their influence.

To this end the tank is of ample size and covered to exclude the light and as far as possible the air.

The incoming sewage is delivered below the water level and also is submerged with the two-fold object of trapping out

the air and avoiding the disturbance of the upper part of the contents of the tank.

On entering the still water of the tank the solids suspended in the sewage are to a great extent disengaged, going either to the bottom or the surface according to their specific gravity.

In the absence of light and air the organisms originally present in the sewage increases enormously and rapidly attacks all the organic matter.

By this action the more complex organic substances are converted into simpler compound and those in turn are reduced into simpler forms, the ultimate products of the decomposition in the tank being water, ammonia and carbonic acid and other gases.

No sludge is formed and the effluent from the tank is comparatively clear and inoffensive and not liable to any subsequent fermentation, the work of decomposition being already done.

The single filter of ample size is designed to avoid the use of alternate siphons, which are liable to fail unless under constant supervision.

In the ponding system the intermitting valve gear is shown in position. This arrangement of a septic tank would make a very complete installation for a house of a large size, but with respects to a cottage or a small house where there is but little land, the problem for the best method of dealing with the sewage is not easy of solution.

Isolated houses near the sea with proper precaution discharge crude sewage into the sea in a satisfactory manner without danger of any nuisance, and such disposal has much to recommend it.

All towns situated on our coast deal with their sewage in this manner, and it is only where the outfall has been badly selected that any evil results.

There are many scientists who contend that this is a waste-

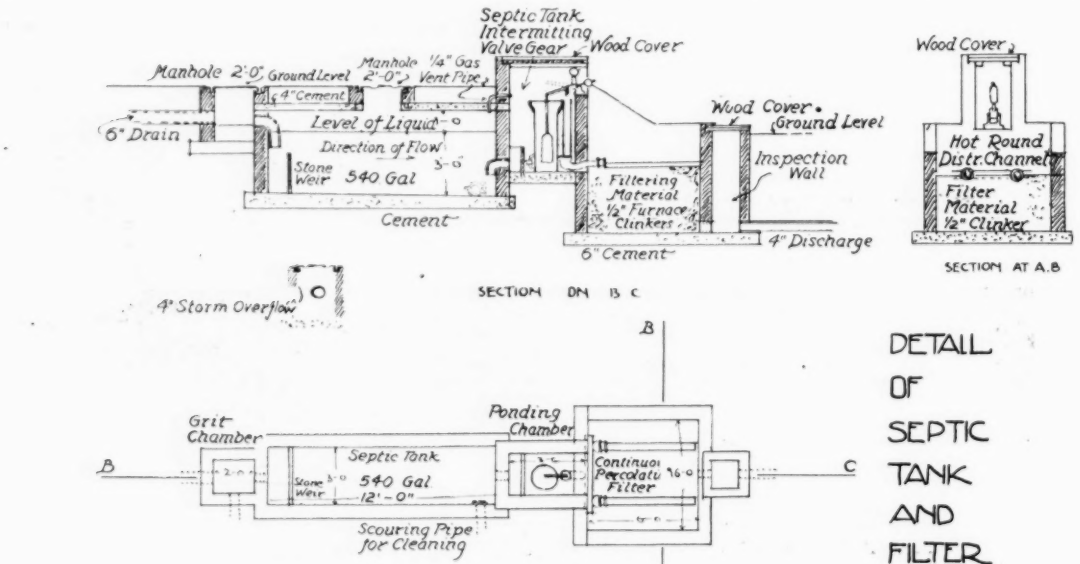


Fig. 4.

The filtration of the sewage or the sewage effluent is not a mere straining action. If that were so, the filters would soon clog and become useless. Moreover the effluent from the septic tank being free from solids is not susceptible of improvement by straining.

The one disadvantage of the septic tank is its first cost because a good amount of gear and valves are required, but there is this to be said for it that once the expenditure has been made, the annual cost of working is practically nil.

In the line drawing of the tank shown the filter has been kept as simple as possible consistent with efficiency in working.

The main drain from the house discharges into a grit or detritus chamber, which collects the loose inorganic matter and also serves as a fresh air inlet to the whole drainage system.

The storm overflow pipe leads from here to a suitable outlet, thus preventing the tank and filter being temporary disarranged during excessive rainfall.

The shape of the tank is the same as that used in good ordinary practice. The length being about four times the breadth and having a fall towards the outlet end.

A scour pipe for periodically cleaning the tank of earthly sediments is desirable though not always supplied.

ful practice, and that the valuable manure contained in sewage should be returned to the land from whence it originally came in the form of food. Whether that be so or not has very little bearing on dealing with the sewage of the isolated cottage at the seaside. In such cases the essential points to be considered are that the outfall must be carried well below the low water mark of the lowest known tide, otherwise a nuisance is very likely to be caused.

It should also be carried to such a point that the incoming tide or wind will not bring the sewage back upon the shore and that the sweep of any current in the locality will not have the same effect upon adjacent coasts.

The State Department announces that the American Embassy at Brussels has been informed by the Belgian Foreign Office that the Belgian Government has given its consent to the exhumation of bodies of American soldiers buried in Belgium, and promising the fullest co-operation of its railways in aiding the transportation of the bodies.

The State Department recently received a telegram from the American Minister to Bolivia, dated July 12th, in which the Minister stated that revolution came as a complete surprise, breaking out simultaneously in the leading cities of the republic on July 12th.

COMPARATIVE EFFICIENCY *of* VENTED HALF-S TRAPS *and* NON-VENTED ANTI-SIPHON, NON-SIPHONING *or* RE-SEALING TRAPS

An Exhaustive Investigation Conducted by A. E. Hansen, Sanitary Engineer, New York, for The Master Plumbers' Association of New York City

(Continued from Page 102 in the July 10th Issue.)

A study of these statements on the value of the "Geco" trap by men who know from training and experience, who have no interest in this trap to any greater or lesser degree than in any other non-siphon trap, by men whom any fair minded person will, I think, consider unprejudiced, shows that the great preponderance of opinion is adverse to the general use of the trap with or without venting, that is, the trap per se, as will be seen from the following tabulation:

Cities Which Would Permit the Geco Trap Without Venting for General Use.

Name.	Population.
Holyoke, Mass.	72,000
Richmond, Va.	163,000
Bay City, Mich.	45,000
Total	280,000

Cities Which Would Permit the Geco Trap with Venting Only.

Name.	Population.
Springfield, Mass.	130,000
Kansas City, Mo.	400,000
Dayton, Ohio	175,000
Quincy, Mass.	55,000
Duluth, Minn.	110,000
Pasadena, Calif.	60,000
Total	930,000

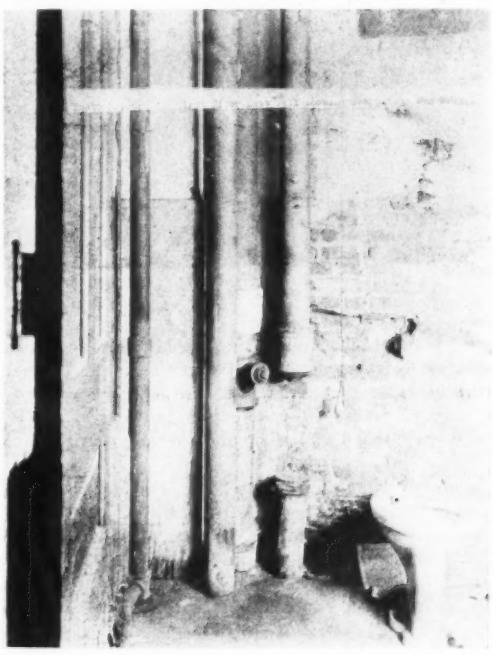
Cities Which Would Permit the Geco Trap Without Venting for Emergency Only.

Name.	Population.
Salt Lake City	150,000
Omaha, Nebr.	280,000
Total	430,000

Cities Which Would Not Permit the Geco Trap, Whether Vented or Not.

Name.	Population.
Schenectady, N. Y.	100,000
St. Louis, Mo.	850,000
Chicago, Ill.	2,750,000
Washington, D. C.	365,000
Elmira, N. Y.	50,000
Minneapolis, Minn.	400,000
Cincinnati, Ohio	450,000
Jamestown, N. Y.	46,000
Rochester, N. Y.	250,000
Philadelphia, Pa.	2,000,000
Cleveland, Ohio	900,000
Newark, N. J.	450,000
Total	8,611,000

These tables show the competent officials of only three cities with a total population of 280,000 as apparently not opposed to the Geco trap for general use without venting; of only two cities with a total population of 430,000 as apparently not opposed to the Geco trap for emergency use without venting; of 6 cities with a total population of 930,000 as not opposed to the general use of the Geco trap with venting and of 12 cities with a total population of over 8½ million as opposed to the use of the Geco trap, whether vented or unvented. Among the latter are Washington, D. C., Chicago, Ill., St. Louis, Mo., Philadelphia, Pa., and Cleveland, Ohio. In addition thereto we find Rochester and Schenectady, N. Y., both of which do permit the general use of unvented anti-siphon traps and Cincinnati, Ohio, which permits a limited use of anti-siphon traps, as opposed to the Geco trap with or without vent; we find Springfield, Mass., which has tested and approved numerous anti-siphon traps without vents as opposed to the use of the Geco trap unless properly vented. Surely such evidence as this cannot be questioned and should convince even the most ardent advocate of the Geco trap that he has been misled and overpersuaded. Should there be any left who still upholds his own warped judgment against this array of official testimony, let me point him to the statement made by T. N. Thomson, consulting sanitary engineer of Scranton, Pa., and still further let me quote what Professor Charles F Chandler, Dean of Columbia University, in speaking of the present attempt to adopt "a patent trap" in New York City, had to say in public at the Chemist's Club of New York, on January 16, 1920, on the occasion of the presentation of



Photo, No. 1.

the Perkins Medal to him for notable achievements: Dr. Chandler said: "To adopt this would be a crime."

It is hardly necessary for me to express my opinion of the design of the trap, in consideration of what has already been said by other men, competent to judge. With your kind permission I would, however, like to dwell a few moments longer on the subject, by giving my own ideas on the "Geco" trap design.

The appearance of the nickel-plated trap from the outside

is rather pleasant and unobjectionable, although somewhat bulky perhaps. It seems to impress one with its absence of corners, its smoothness of finish, its gradual curves suggesting innate cleanness, and its large protruding body reminds one of the aggressiveness and substantiality represented by the fully developed abdomen of the capitalist so often seen in the press cartoons.

But when bi-sected and its inner self is laid bare, the story is different. Instead of highly polished and plated smooth surfaces which would reject filth, we see rough brass, containing minute depressions, and projections and unevenly cast faces which, unlike the smooth, bent, brass tubes of the ½ S trap, afford innumerable splendid lodging places for the commencement of grease and filth deposition

Photo, No. 2.

with subsequent ever increasing rapidity of accumulation We see two cleverly concealed partitions, one at the inlet and the other at the outlet end, although the revised New York City plumbing code, effective January 27, 1919, prohibits traps "that depend upon interior partitions for a seal."

It is plainly evident that the lower 1½ inches of the trap seal are entirely dependent on the partition at the inlet end. In view of the results of the "official" tests of the trap at No. 30 City Hall Place by the New York City Board of Standards and Appeals, which reduced the trap seal by siphonage to about ⅜ inch, this is a very serious matter. Cracks and sand holes occur frequently in castings of all kinds and, when present in the partition, cannot be detected; partitions also are subject to penetration by corrosion. With a trap seal lowered as in the tests, to ⅜ inch, any cracks, sandholes, or perforations in the lower partition will vitiate the trap. It is not clear to me therefore how the Board of Standards and Appeals can consistently approve a trap which violates the plumbing code prepared by the same Board.

It is also seen from an inspection of the dissected 1½-inch "Geco" trap that its inlet opening is contracted at the top to 1¼ inches, and at the bottom in one diameter to 15/16-inch and at right angles thereto to 1⅜ inches; its outlet opening to 1/32 inch and 1⅜ inches respectively. At these restrictions the cross sections are oval. The areas of cross sections are as follows:

Restricted Inlet at top,	1.225 square inches = circle 1.25" diam.
Restricted Inlet at bottom,	1.012 square inches = circle 1.13" diam.
Restricted Outlet,	1.114 square inches = circle 1.19" diam.
Full Bore,	1.766 square inches = circle 1.50" diam.

Hence the restricted areas, expressed in percentage of the full 1½-inch bore outlet area, are as follows:

Inlet at top	70 per cent.
Inlet at bottom	57 per cent.
Outlet	63 per cent.

The restricted minimum diameters, expressed in percentage of the full 1½-inch bore outlet diameter, are as follows:

Inlet at top	83 per cent.
Inlet at bottom	63 per cent.
Outlet	69 per cent.

That framers of the New York City plumbing code did not propose to have any waste pipe diameters and no trap sizes smaller than 1½ inches, is shown in paragraphs 90 and 112. Hence the Geco trap conflicts with the code. Personally I object most seriously to, and I would not specify, any trap having any passage so decidedly restricted in any diameter or area. Pins, broken matches or toothpicks, broom straws and similar substances would easily pass through the fixture strainer and become lodged crosswise at the restricted diameter, producing thereby the initial foundation for complete stoppage.

I have to report also that, when the trap contains sediment and has its contents violently disturbed by a discharge of water from a fixture above through its soil or waste stack, it has the tendency to throw back the sediment from the underside of the outlet end partition into the restricted inlet and thereby clog the latter. This was demonstrated at the "official" test made at No. 30 City Hall Place. At the completion of this test I had the cleanout screw removed and attempted to insert my little finger into the restricted inlet opening. This I was unable to do, since this opening was practically closed with tightly packed sediment, such as sand, sawdust, tea leaves, and coffee grounds, with which the trap had been previously tested for self-cleaning and a part of which remained in the trap.

A comparison of the "Geco" trap with the ordinary ½ S trap regarding their relative self-cleaning properties is of considerable interest. The formation of an opinion on the relative amount of settleable solids which will be deposited in any two chambers of unequal design requires consideration mainly of the following conditions:

1. Character of the liquid passing through.
2. Degree of surface roughness of the chambers.
3. Number of changes in direction of flow and radius of curvature of same.
4. Number of design of baffles or projections tending to retard the flow.
5. Maximum cross section area of flow.
6. Velocity of flow.
7. In the case of liquids containing colloidal, congealing or sticky substances, the ratio of the cubical contents to the wetted surfaces.

In the case of plumbing traps the character of the liquid depends mainly on the use of the individual fixture to which the trap is attached. Outside of water closets there are probably no fixtures from which liquids are discharged which contain a greater amount of settleable solids than kitchen sinks. In addition to the settleable solids, such as coffee grounds, tea leaves, food remnants, and undissolved soap particles, the sink wastes contain frequently considerable amounts of grease and sticky substances from pots and

kettles. Much of the suspended matter in sink discharges is not settleable, but so finely divided that it refuses to settle and is in the form called "colloidal". It is well known that such colloids, which do not settle of their own volition, are electrically charged and will attach themselves by electro-magnetic force to any surfaces at rest, near which they happen to float. The greater such surfaces, the greater will be the amount of colloids deposited. The surface area is not only dependent on the shape or design of a trap, but also on the degree of surface roughness. A smooth drawn brass surface, for instance, may have only 75 per cent of the actual area of a surface, of rough cast brass, of equal dimensions if all the minute crevices and projections of the latter were measured.

Moreover, the rough cast brass surfaces offer greater friction to the flow than do the smooth drawn brass surfaces, and thereby they tend to decrease the velocity of flow. That the deposition of solids increases with the reduction of velocity of flow, is well known; for this reason we provide for minimum slopes of waste and sewer pipes.

The more changes in direction of flow, and the smaller their radius of curvature the more will the velocity be retarded. Sharp corners, such as at the outlet baffle of the "Geco" trap are most objectionable because of their very small radius of curvature. Still further, the baffle at the outlet end of this trap tends to reject the flow and will materially increase the deposition of solids.

The velocity of flow is directly proportioned to its cross section area. In the 1½-inch "Geco" trap the maximum cross section area is an ellipse $4\frac{1}{2}'' \times 3\frac{1}{16}'' = 13.8$ square inches; in the ordinary ½ S trap the cross section area is 1.76 square inches. Hence the minimum velocity of liquids passing through the 1½-inch ½ S trap is nearly 8 times as great as that passing through the 1½-inch Geco trap. That such a marked difference in velocities produces a decidedly marked difference in the amount of sedimentation, is self-evident.

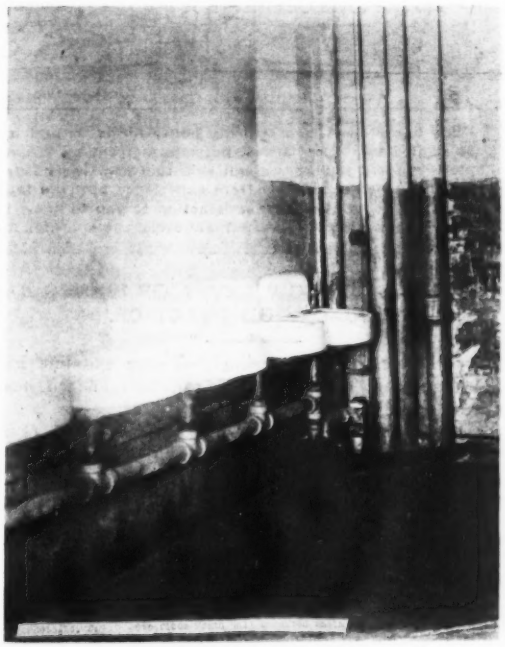
The total capacity of the 1½-inch Geco trap is 49.6 cubic inches; that of the ordinary ½ S trap having a 2-inch seal is 9.60 cubic inches. The wetted area of the former is 76.4

Photo, No. 3.

square inches, of the latter 32.5 square inches. During periods of quiescence of the trap water, grease contained in equal proportions in the water of both traps would be deposited on the surfaces of both traps; but the greater the amount of water, the greater the amount of available grease, and the smaller the available area of deposit, the greater will be the thickness of deposit. Hence, if the ratio of contents to wetted area in the Geco trap is $49.6 \div 76.4 = .65$ and of the P traps $9.6 \div 32.5 = .3$, it follows that the thickness of deposited grease in the Geco trap will, during the same rest periods, be $.65 \div .3$ about twice as great as in the P trap.

Summing up briefly my opinion of the 1½-inch Geco trap, I would say:

1. The trap has a pleasing exterior.



Photo, No. 4.

2. While its depth of seal is about double that of a good ½ S trap, it is probably within the limit of requirements of a self-cleaning trap.
3. Its lower partition is a violation of provision 100 of the New York City Plumbing Rules and Regulations, as adopted by the Superintendents of buildings, effective April 23, 1912, and as amended by the Board of Standards and Appeals, July 5, 1917, and Dec. 27, 1918; effective Jan. 27, 1919.
4. The three restrictions in its diameters, namely, at the top of the inlet tube, at the bottom of the inlet tube, and at the outlet tube, are violations of paragraphs 90 and 112 of the same rules.
5. It offers greater resistance to the flow of liquids than the ½ S trap. It thereby decreases the velocity, and increases the fouling capacity. This greater resistance is caused by
   a. Rougher interior surfaces.
   b. Sharp turn at outlet partition which produces high friction, eddies and counter-currents.
6. Its minimum velocity of flow for the same rate, is, on account of its large cross section area, only about ⅛ of that in a ½ S trap.
7. Its rough interior surfaces will collect colloids considerably more rapidly than the smooth walls of the drawn tube P traps.
8. The shape of the trap is such that, under high rates of flow, there will be circular eddies tending to wrap hair, lint, and other fibrous materials into balls and to reject them together with other suspended substances into the contracted inlet. That such reverse action of flow

(Continued on Page 203.)

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

RANGE BOILER BELOW LEVEL OF WATER BACK IS NOT GOOD PRACTICE.

Editor "Domestic Engineering":—Please examine Fig. 1 herewith and tell me if a boiler can be made to heat if connected up in this manner.

Philadelphia. G. G. B.

No, the boiler will not heat, if connected up as shown in Fig. 1. It is a physical impossibility for the water

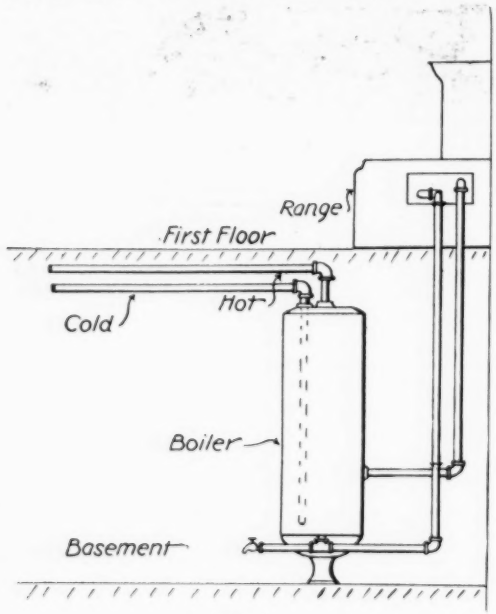


Fig. 1.

heated in the water back to descend and enter the boiler when the arrangement is piped up this way.

Furthermore, it does not matter how you pipe it up, the arrangement is fundamentally wrong.

The range boiler should be above the level of the heater which heats it.

QUESTION CONCERNING WHAT A PLUMBER SHOULD KNOW ABOUT ELECTRICITY.

Editor "Domestic Engineering":—Referring to an article in a recent issue of your valuable paper, entitled "What a Plumber Should Know About Electricity," I would like to know how to determine the different currents, such as 60 or 125 cycles, direct or alternating current, single phase or three phase motor.

N. J. G. S. J.

There are various methods of ascertaining the difference between alternating and direct current.

Probably the most simple explanation of this is that electric transmission lines having transformers will be found to be alternating current. The standard voltage for lighting all over the country is 110 volt A. C. (alternating current), 60 cycle, and there will be few instances where other alternating currents will be used. If the alternations are known, such as 7,200, it is a simple matter to determine the cycles. The cycles are rated as per seconds, and since it requires two alternations to make a complete cycle, it is a simple matter of dividing the complete cycle by 2 and dividing this quotient by 60, the second per minute, and the result will be the cycle.

Example: $7200 \div 2 = 3600 \div 60 = 60$ cycles.

An alternation is the change which the current undergoes in rising from zero to maximum pressure and returning back to zero; that is a single positive or negative wave or half period.

Pulsations of alternating current pass out from the generator on one wire and return on the other and then reverses the action, making a complete cycle.

The principal reason that 60 cycle current is used in lighting is that the frequency is so great that it is not possible to discern the changes in the electric lamp.

If a slowly carrying alternation current be passed through an incandescent lamp, the filament will be seen to vary in brightness following the changes of current strength. If, however, the alternations take place more rapidly than about 50 to 60 per second, the eye cannot follow the variations and the lamp appears to burn steadily.

Alternating current generators have collector rings which carry the current from the armature to the wires, while direct current generators have communtators which carry the current from the armature to the wires. These coils are so attached to the commutator that the current is forced to travel continuously in the same direction.

All generators generate alternation on current, and the method of collecting it for transmission purposes differs as stated.

Twenty-five cycle current is used for conversion to direct current, for alternating current railways and for machines of large size. The 60 cycle frequency is used for general distribution for lighting and power.

Generators and motors will be found to have name plates setting forth the facts relative to the generator or motor and usually the markers' name will be found on this plate.

Direct current (D. C.) is used for carrying short distances, while high voltage alternating current is employed for carrying current long distances. The high voltage makes it possible to carry current long distance on comparatively smaller wires, effecting a saving in copper.

A simple manner of determining the polarity of direct current is to fill a glass with water and then add sulphuric acid, salammoniac or even common table salt to this water, then hold the two ends of the wire a short distance apart in the water. The end of the wire will bubble slightly. There are devices on the market which will produce the same result, but they are not always available.

A MISPLACED DRIP PIPE.

Editor "Domestic Engineering":—The accompanying illustration and its description will no doubt be of interest to many readers of your "Question and Answers" department, as the information it conveys may prove of great value in an emergency.

The illustration shows a plant of about 75 horse power, consisting of one tubular boiler and an automatic engine. While going from the boiler room to the engine room, it was necessary to ascend 11 steps. The main steam pipe was connected into the dome as shown, and passed through a brick wall, turned downward, then resumed a horizontal position under the engine room floor. It then turned upward and discharged into the bottom of the cylinder, to use a common expression, but it really delivered steam into a steam chest located under the cylinder. After driving the piston it passed out of the exhaust pipe, which was also under the cylinder.

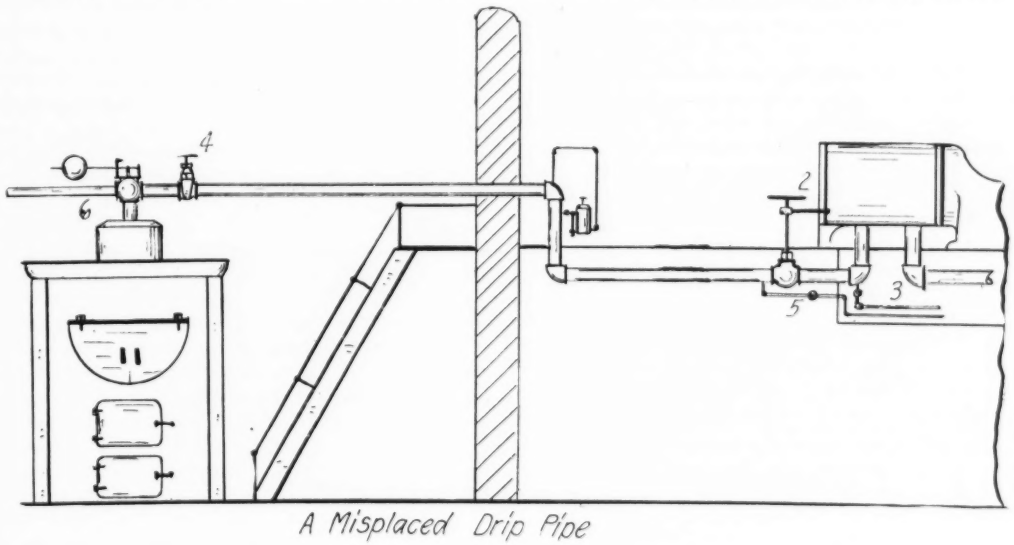


Fig. 1.

When this engine was shut down at night, the following routine was followed: The throttle valve, 2, was closed, and after the piston had come to rest, the drip valve, 3, was opened to allow all water to escape. The gate valve, 4, was then closed, and valve 2, was opened, to prevent water from accumulating in the pipe.

To start the engine gate valve, 4, was slowly opened enough to allow steam to blow through the whole pipe. After it was well warmed, 2 was closed, also 3, and 4 was opened. This left the pipe free from water, and it was safe to open valve 2 and start up in the usual way.

As long as this plan was followed, there was no trouble, but one Saturday night all steam pressure was to be removed, in order to clean the boiler on Sunday. The engineer was not an experienced man, hence with this difference in conditions on his mind, he did not follow the usual routine, but simply closed valve 2 and opened valve 3. On Monday morning he proceeded to raise steam before draining the main pipe, leaving gate valve 4 open as it was. As soon as 2 was slightly opened, water hammer in the pipe, under the floor, burst valve 2, causing the plant to be shut down all day, while a new throttle valve was installed. Another drip pipe was connected in front of valve 2 as shown at 5, therefore by opening it slowly, all water could be drained out at any time, thus preventing further trouble along this line.

The loss due to shutting down the plant for one day, plus the expense of a new valve, etc. was a comparatively large sum, when we consider the small mistake in locating a drip pipe which caused it.

When drip pipes are put in such pipes, care should be taken to use only small sizes, because a drip pipe and valve that are too large will cause dangerous water hammer in the main pipe, if the valve is carelessly opened too rapidly. A small pipe will render this impossible. For main pipes of 10 inches or less, the drip should not be more than ½-inch, and up to 14-inch it ought not to exceed ¾-inch. All nipples between the drip valve and the main pipe should be extra heavy, as ordinary piping is not strong enough to be safe in this service.

The outlet, 6, from the safety valve on this boiler was two sizes smaller than the main steam pipe, hence the former was 40 per cent smaller than the latter. Assuming that the safety valve was the proper size for this service, the outlet ought to be full size to the outer air, thus insuring a free delivery of steam.

New Haven, Conn. W. H. Wakeman.

The Associated Press reports from Scranton that: "Strong opposition to not only the submission of exhibits, seven in number, dealing with alleged monopolistic control and profiteering in anthracite industry during the past five years, but also the public argument when the advisability of the presentation of the figures and evidence would be thoroughly discussed, was put forth by coal operators at the sessions of the Anthracite Mine Commission here."

When in doubt, ask "Domestic Engineering."

COST PLUS TEN VS. COST MINUS FIFTEEN

The Story of Master Plumber Edwin Brockson Who Did Not Change His Methods When the World Was Changed After the War

By Daniel Louis Hanson, Author of "Moses Irons Stories"

EDWIN BROCKSON of Chicago, the town where I have spent most my days—had, has and will continue to have a wonderful brain. I know this because he told me so—has told me again and again.

Brockson's brain, however—and I say this in all kindness—must look to those angels of the seventh heaven, as Flanders and Picardy did to the brave aviators who patrolled the skies over France that the Prussian terror might be kept back from Western civilization—lines here and there, lines crossing, lines running zigzag. The finest of lines apparently, but the angels of the seventh heaven and the aviators know that the lines are ruts—terrible ruts. And we all know that ruts are only a longer form of graves.

I didn't see the real condition of the Brockson brain till I got far from him—and staid away for a time. But after getting East I began to see what the fissures in the Brockson brain really were. Ruts, ruts—nothing but ruts. And having had my eyes opened I began to see, what before had been a riddle to me, the ups and downs of Brockson's career. I knew why, now. Getting the proper perspective—whether of a man or of a league of nations—is the only correct way.

I got far from Brockson—so I thought—till one day, November 11, 1918, he dropped into my Canal Street office in Boston and shouted his opinions to me above the dim of factory and steamer whistles, of bells and of artillery. Don't forget it was Armistice day!

"It will never be the same old world again! The War has changed everything, both men and methods," said Edwin Brockson of Chicago.

And I cried out: "Amen, Amen!" For at last Brockson had gotten his brain ironed out.

Then, only the other day, Brockson again walked in on me and whispered—for there were no whistles blowing or bells ringing this time: "The War didn't change human nature one bit! The old Adam is still with us and still working overtime at his old tricks."

And I said: "Amen to that!"

Then, happening to recall the earlier occasion when I had Amen'ed just the opposite sentiment, I began to hedge: "Yet, Brockson, you must realize—"

At which he cut me short in that, old bullying way of his: "Don't say 'but' to me! I tell you the old Adam—that means Competition, of course—is still alive and functioning in the old way. He is worse than formerly."

That knocked me out for a minute or two, then I happened to think of the real nature of the Brockson brain and began using my own. Was the old Adam—which is another name for Competition—still at work? Were men and methods as they had been before the red flame swept over the world? Was it simply a question of doing things—buying, selling, manufacturing, plumbing and heating—in the old way with our eyes shut tightly that we might not see face to face that Public, which we curse in private and fawn at in the open?

Then I said: "No, Brockson, you are wrong now—as wrong this time as you were right there in November, 1918! It isn't the same, old world! It is a very different world, though maybe you and I are no different, so much the more shame to us! And so much the worse for us, too! For out around us—here in Boston and out there in Chicago, and farther afield even in California—are business men in our line awake to the new situation where competition is recognized as being as menacing and hurtful to the man who buys, as it always has been to the man who sells. And those wide-awake chaps are going to leave us far behind in the running."

Then I went into an adjoining office—that of a neighbor—and brought back with me a Vandyke print of a certain housing project just finished over in New York State: "See that, Brockson? That represents an investment by a large mill corporation of nearly three hundred thousand dollars, and it was done entirely on the cost plus ten—or maybe it was fifteen-plan! Brockson, do you suppose a corporation anywhere in this broad land previous to 1914 would have placed a contract of this nature? Would have gone in on an investment of nearly a third of a million dollars without first having scoured the entire country—fine tooth combed it to change the figure of speech—for bids, bids and bids? You know there wasn't. Then don't tell me that men and methods are the same now as they were then!"

"But—" began Brockson. However, I cut him short.

"This is only one project; I know of at least four others under way at this very time. Here are whole books issued by Uncle Sam telling of scores of such projects under way and already finished. So this—" and I pointed to the Vandyke print—"is not an isolated case; it is in the air. It is the spirit of 'live and let live' that none but socialists dared to even mention five years ago. And they only *dreamed* of it, they had no real belief that it would ever come about."

I reached for a bill on my desk: "See here, Brockson, is an invoice of twenty gross brass goods, running close to thirty-five hundred dollars, which I placed five months ago on the 'market price when invoiced' plan. I will confess I didn't like too—the old Adam was still strong in me, though it was the brass manufacturer I thought was the old Adam. But I couldn't get this particular line except on that basis. Of course, I was a fool according to your reasoning—the reasoning of the old Adam—but today the invoice comes in and it is lower in discount than other manufacturers are quoting at this time on the same quality of goods."

I got up and shook my finger under Brockson's nose—I have too much sense to ever want his trade—and asked him: "Do you mean to tell me that men and methods haven't been changed? *Men* have, Brockson—*you* haven't! Methods have

changed—but yours haven't—you always were noted for having red tape instead of system, and of suspecting the other chap of having the knife out simply because you knew you had one up your own sleeve!"

You see I wasn't afraid of Brockson. Why should I be when in this new day customers like Brockson were sure to prove undesirable?

"Competition ruled the world before 1914; Competition—a nation putting quantity—mere bulk—against quality—actual value—pulled off the War. It was beaten to a frazzle. You see that nation didn't sense what wise men have always known—that Competition has no handle to fit over its razor-sharp edges, so hurts the one who wields it as much as the one attacked by it. Sometimes more so."

"Do you mean to say that I am to go out and get business on my reputation and not on a price basis?" and Brockson looked at me in sheer astonishment.

I looked at Brockson for a full minute, then I replied truthfully: "No, I don't mean that *you* should. Brockson—nor that *you* could."

"See here, Brockson, is an invoice of twenty gross brass goods, running close to thirty-five hundred dollars, which I placed five months ago on the 'market price when invoiced' plan."

And Brockson smiled as if I had paid him a double-ply compliment!

"The trouble has been, Brockson, that you have had a subtractive mind instead of one given to addition; you have been a destructive pessimist rather than a constructive optimist."

At that Brockson flared some: "Do you mean to tell me that I am to reveal my costs to Tom, Dick and Harry?" he demanded.

"I would rather reveal my costs with a profit added, than to show in all its hideous nakedness my cost less a loss. You might as well face one condition in this modern world in which you live—but of which you are not a part—that every business man has got to stand from this time forward on his costs. The world is going to take those costs and pay them back to us with a plus profit. Now don't fly off the handle—I am not saying that the invoice price is the cost. I know too much about business to believe that absurdity! But the Public—that same Public which you and I have damned year after year—will have to have your cost, then it will give a profit on it. Don't forget that—a profit! Which will you have, Brockson, the cost plus profit, or cost minus loss?"

"You talk like a clam!" said Brockson, which showed he was from Chicago where there are no clams—for Alantic Coast clams are as silent as death.

"Brockson, the old Competition is dead—shot to pieces on Flanders field, on the frozen marshes of East Prussia and in the passes of the Italian Alps. It is dead—don't forget that. But in its place has sprung up something else—Service. And Service has two facets—now one shines you in the face, now the other dazzles you—it gives and it receives. That Service—and none but a fool would attempt to deny its existence—will insist on your getting a profit, for it knows that the man who doesn't show a balance on the right side of his ledger, is a sore spot on the body economic. Society can't afford to have business men skulking in the alleys among the ash cans any more than it can afford to have the tramp running around loose."

Now I again pointed my finger at Brockson, for that rutted—and runted as well—brain had to be held to thinking by gestures:

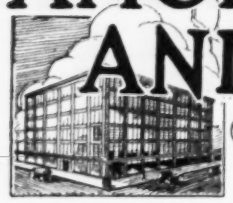
"Brockson, the world will insist you learn how to figure costs. The world no longer laughs and profits from the fact that you, and others like you, have not the least idea what cost really is. The world no longer can afford to profit from your ignorance, for the world knows it will have to pay the price in the long run with compound interest to boot. Millions have died during these last four years because a whole nation had never figured the cost of its system of doing business. No, Brockson—long since shot to pieces the idea that any one profits from this or that man being fool enough to entertain false costs on his estimate sheets."

"All nonsense—" began Brockson, getting to his feet in sheer disgust.

"I point again to these Van Dyke prints; they are proof that what I have said is common sense—according to these modern, after-the-war ideas. I point to this invoice, I point to that book issued by the United States Government which illustrates many other building projects, now accomplished facts, which demonstrate that Competition in the old sense of the word is dead, and that Service has taken its place. Oh, of course, there are a few left, who will try to pull off the old stunts—a few still hugging their old vices to their scrawny bosoms. But they will quickly be identified and labelled. So-

(Continued on Page 208.)

AMONG THE WHOLESALERS AND MANUFACTURERS



RUUD MFG. CO. BUYS PROPERTY NEAR PLANT.

The Ruud Mfg. Co., of Pittsburgh, Pa., has purchased two pieces of property on Smallman and Mulberry Streets, near its plant in that city. The property is improved with eight brick buildings.

NORRISTOWN MAGNESIA & ASBESTOS CO. BUILDS NEW ADDITION.

The Norristown Magnesia & Asbestos Co., Norristown, Pa., has completed the erection of an addition to its plant at Doylestown, Pa. This addition will enable the company to increase its production there approximately 50 per cent.

BUILDING FACTORY ADDITIONS.

The Akron Brass Manufacturing Co., of Wooster, O., is building a one-story brass foundry and machine shop 40x185 ft., to cost with equipment about $150,000.

The Dixie Brass & Foundry Co., of Birmingham, Ala., is planning the erection of a machine shop on Sixth Avenue and Twelfth Street in that city.

THOMAS MADDOCK'S SONS CO.'S SALESMEN IN CONVENTION.

The salesmen of the Thomas Maddock's Sons Co., of Trenton, N. J., held its summer meeting at the company's general office in that city from Monday, July 12th, to Saturday, July 17th. The meeting was devoted to a general discussion of present day problems. On Wednesday the party went to Wilmington, Del., and visited the Speakman Co.'s plant, and on Friday a tour of inspection was made to the factory of the American Sanitary Works at Washington, N. J. The following representatives attended the meeting: Edmund Henry, L. A. Kelly, E. B. Lane, John Bitjer, Jr., M. F. Whelan, F. F. Bulkeley, A. A. Sutherland, and William Devine, Jr.

CHICAGO JOBBERS ENJOY OUTING AT HOELSCHER FARM.

For the first time in eight years, a number of Chicago jobbers got together last week for a most enjoyable day's outing. This event took place on Wednesday, July 14th, and twenty jobbers were the guests of H. M. Hoelscher at his beautiful farm, which is located at Wauconda, Ill. This beauty spot occupies 380 acres, a large frontage of which overlooks the lake at this point. The weather was all that could be desired and some of those present took the opportunity of having a little swim. A fine chicken dinner was served during the day and there was a sufficient variety of liquid refreshments to please most any taste. Another feature of the outing was a ball game, the sides being captained by Ed. Garrity and C. M. Sherrill. Mr. Garrity led his warriors to victory by a score of 12-10, and there were more home runs made than Babe Ruth ever made or heard of in one day. The following Chicago jobbers were present: E. C. Garrity, O. J. Deschauer, H. M. Hoelscher, W. E. McCullum, C. M. Sherrill, William E. Clow, Jr., Eugene Buehler, F. D. Gassmere, John L. Fruin, R. C. Flinder, C. A. Perry, M. Davies, V. Crews, H. C. Yelton, C. A. Ford, C. V. Kellogg, James Weir, F. S. Kaulback, J. R. Steneck, C. E. Barrows and Ed. Hoelscher.

BUILDING PERMITS FOR JUNE.

Reports from 199 Cities Show a Loss of 5.7 Per Cent from June, 1919, Activity.

Encouraging reaction from the May slump is apparent in June statistics for building from 199 cities, which, as officially reported to "The American Contractor," represent a total valuation of $133,117,320. Considering that the upward turn has taken place during unprecedentedly poor freight service, and in the face of tight money, high material prices, and high labor costs, conditions which during June had shown little hope of speedy improvement, the upward turn is significant. It spells with no uncertainty the fact that men are keeping their grip on the situation, and that projects for building are going to be advanced or at least held to the point of preparedness where they can be pushed at the first signs of a break.

Comparing thirty-one cities whose permits have gone over the million dollar mark gives for June a total of $88,470,475 and a total of $85,408,270 for May. This gives a gain of three and one half per cent for June operations. In only six of these cities is June the low month for 1920. These cities are Baltimore, Dallas, Fort Worth, Minneapolis, Boro of Manhattan, and Tulsa. For Atlanta, Los Angeles, and the Boro of Bronx the peak of 1920 activity is reached in June.

The total of June projects from the 199 cities is $131,117,320 as against $139,020,388 from the same cities for the month of June, 1919. This is a decrease of five and seven tenths per cent from 1919 activity and is the first month of 1920 to show a decrease. However, it must be regarded that from a low start in January, 1919, activity progressed steadily until the first slump came in the month of July. June was the peak of activity during the first six months of last year.

The detailed statistics for June, 1920, as compared with June, 1919, follow herewith:

	June, 1920 Estimated cost.	June, 1919 Estimated cost.	Per cent. Gain.	Per cent. Loss.
Alabama—				
Birmingham	$ 263,190	$ 295,097	.....	10
Arkansas—				
Little Rock	202,270	358,927	.....	43
California—				
Alameda	42,785	35,849	18	...
Berkeley	553,314	149,276	271	...
Fresno	219,743	285,672	.....	23
Long Beach	980,210	413,926	236	...
Los Angeles	6,610,681	1,914,470	247	...
Oakland	1,050,642	704,782	43	...
Pasadena	258,675	193,234	34	...
Sacramento	320,405	126,020	154	...
San Diego	204,935	144,545	42	...
San Francisco	1,949,692	1,516,778	30	...
San Jose	260,467	94,462	173	...
Stockton	125,688	154,985	.....	18
Colorado—				
Denver	753,700	521,650	44	...
Pueblo	42,256	43,200	.....	1

	June, 1920 Estimated cost.	June, 1919 Estimated cost.	Per cent. Gain.	Per cent. Loss.
Connecticut—				
Bridgeport	1,033,610	698,692	43	
New Haven	512,345	784,528		34
Delaware—				
Wilmington	336,602	649,889		48
District of Columbia—				
Washington	1,343,560	2,780,986		51
Florida				
Jacksonville	297,273	304,785		2
Miami	534,000	450,250	17	
Pensacola	69,915	109,794		36
Tampa	184,804	75,650	144	
Georgia—				
Atlanta	2,392,662	1,181,037	102	
Augusta	157,362	93,697	67	
Savannah	175,825	97,100	81	
Idaho—				
Boise	169,000	41,342	312	
Illinois—				
Aurora	44,960	42,550	5	
Chicago	6,836,900	11,415,600		40
Decatur	133,100	230,925		42
East St. Louis	93,377	54,050	72	
Evanston	121,100	82,950	45	
Peoria	150,300	1,127,765		86
Quincy	21,500	174,500		87
Rockford	157,845	203,093		22
Springfield	95,065	173,390		44
Indiana—				
Elkhart	22,700	20,300	11	
Evansville	175,308	96,910	80	
Fort Wayne	487,285	245,143	99	
Hammond	103,030	218,860		52
Indianapolis	836,331	1,044,260		19
Richmond	123,450	45,250	175	
South Bend	480,310	961,878		52
Terre Haute	99,040	80,545	23	
Iowa—				
Davenport	90,385	245,747		63
Des Moines	256,625	532,140		51
Dubuque	35,014	285,695		87
Mason City	93,829	34,045	175	
Sioux City	598,180	820,475		26
Kansas—				
Kansas City	37,445	170,276		78
Leavenworth	64,000	9,800	553	
Topeka	119,365	152,790		21
Wichita	240,767	801,340		69
Kentucky—				
Covington	50,575	76,025		12
Lexington	115,365	102,000	13	
Louisville	1,002,550	473,503	111	
Louisiana—				
New Orleans	1,170,210	422,865	176	
Shreveport	243,228	174,673	38	
Maine—				
Portland	248,475	96,935	155	
Maryland—				
Baltimore	1,222,675	4,282,075		71
Cumberland	211,170	77,023	175	
Massachusetts—				
Beverly	20,100	26,290		23
Boston	2,567,101	2,746,264		6
Brockton	153,360	249,220		38
Cambridge	1,536,740	118,236	1201	
Chelsea	101,310	73,380	38	
Chicopee	54,575	72,650		24
Fall River	341,225	117,690	89	
Fitchburg	80,780	104,510		22
Haverhill	119,850	171,300		30
Holyoke	123,945	45,225	174	
Lawrence	142,655	145,460		1
Lowell	978,755	594,545	64	
Lynn	172,435	84,185	104	
Medford	64,220	142,283		54
New Bedford	276,300	434,300		36
North Adams	20,100	123,750		83
Quincy	302,282	153,776	96	
Salem	67,768	193,857		65
Somerville	105,645	60,770	73	
Springfield	538,790	927,864		41
Waltham	25,700	53,575		52
Worcester	662,595	491,973	35	
Michigan—				
Battle Creek	110,825	122,220		9
Detroit	8,407,530	6,644,545	26	
Flint	1,704,829	1,662,470	2	
Grand Rapids	322,898	637,010		49
Jackson	137,870	150,405		8
Lansing	248,430	234,260	6	
Saginaw	311,064	246,235	26	
Minnesota—				
Duluth	1,369,300	277,863	392	
Minneapolis	1,171,890	1,351,985		13
St. Paul	854,303	1,056,433		19
Mississippi—				
Jackson	67,000	12,000	458	
Missouri—				
Kansas City	1,452,950	937,550	54	
Springfield	85,625	29,925	186	
St. Joseph	56,021	187,855		70
St. Louis	1,861,415	2,016,711		7
Montana—				
Butte	18,000	105,580		82
Nebraska—				
Lincoln	128,750	161,380		20
Omaha	1,888,620	634,320	197	
New Hampshire—				
Manchester	85,637	57,445	50	
New Jersey—				
Bayonne	313,400	555,025		43
Camden	139,090	274,204		49
East Orange	217,305	566,084		61
Elizabeth	216,475	503,313		56
Hoboken	40,063	24,800	60	
Newark	1,238,595	1,430,885		13
Orange	97,591	87,205	12	
Passaic	66,350	200,600		66
Paterson	202,730	365,477		44
Plainfield	321,650			
Trenton	430,453	388,971	10	
New Mexico—				
Albuquerque	39,626	36,850	7	
New York—				
Albany	472,510	342,460	38	
Auburn	56,789	13,508	307	
Binghamton	164,789	324,446		48
Buffalo	1,095,000	1,576,000		30
Mt. Vernon	78,685	158,390		50
Newburgh	16,250	19,325		15
New York City:				
Boro Bronx	2,935,793	3,015,675		2
Boro Richmond	488,057	418,432	16	
Boro Brooklyn	5,895,883	8,184,175		27
Boro Manhattan	8,447,500	10,700,286		21
Boro Queens	3,004,018	4,729,966		36
Niagara Falls	231,275	506,825		54
Oswego	101,000	25,035	303	
Rochester	752,126	597,066	26	
Schenectady	127,395	143,855		11
Syracuse	627,675	840,695		25
Troy	105,240	66,623	58	
Yonkers	296,500	244,400	21	
North Carolina—				
Wilmington	88,100	35,300	151	
North Dakota—				
Fargo	221,000	196,700	12	
Grand Forks	14,150	24,950		43
Ohio—				
Akron	2,199,814	2,348,282		6
Canton	209,865	471,870		55
Cincinnati	2,375,375	902,100	163	
Cleveland	5,770,550	4,655,625	23	
Columbus	1,039,495	648,660	60	
Dayton	510,517	864,853		40
Hamilton	68,124	169,301		59
Mansfield	60,550	155,310		61
Sandusky	48,900	243,875		79
Springfield	15,475	165,795		90
Toledo	631,245	654,832		3
Youngstown	266,405	769,820		65
Oklahoma—				
Muskogee	74,950	53,355	41	
Oklahoma City	334,015	868,605		61
Tulsa	585,793	2,219,743		73
Oregon—				
Portland	1,035,785	1,063,118		2
Pennsylvania—				
Allentown	173,250	114,450	51	
Altoona	32,917	183,693		82
Bethlehem	148,525	187,840		20
Erie	720,167	223,581	221	
Harrisburg	101,525	480,850		78
Johnstown	820,000	290,000	182	
McKeesport	95,500	73,626	29	
Philadelphia	6,743,015	7,354,625		8
Pittsburgh	921,859	1,136,738		19
Reading	224,850	200,100	12	
Scranton	87,160	165,310		47
Wilkes-Barre	52,124	42,832	20	
York	163,605	34,775	370	
Rhode Island—				
Central Falls	10,450	187,875		94
South Carolina—				
Charleston	84,517	60,820	39	
Columbia	61,547	78,768		21
South Dakota—				
Sioux Falls	405,755	307,360	31	
Tennessee—				
Chattanooga	406,718	298,506	36	
Knoxville	348,313	138,115	152	
Memphis	625,900	524,340	19	
Nashville	232,544	503,942		53
Texas—				
Austin	107,957	80,650	33	
Dallas	891,570	935,480		4
El Paso	134,924	221,297		39
Fort Worth	684,271	755,963		9
Galveston	51,094	91,914		44
Houston	374,084	598,552		37
Utah—				
Ogden	57,350	81,300		29
Salt Lake City	131,369	273,405		52
Vermont—				
Burlington	48,550	48,250	1	
Virginia—				
Norfolk	172,915	1,097,462		84
Portsmouth	34,957	181,290		75
Richmond	709,844	634,625	11	
Roanoke	88,330	159,330		44
Washington—				
Everett	22,925	65,255		64
Seattle	1,323,230	1,755,795		24
Spokane	203,380	330,150		38
Tacoma	256,003	364,357		29
West Virginia—				
Charleston	82,850	239,920		65
Huntington	326,270	214,935	51	
Wheeling	132,797	21,000	532	
Wisconsin—				
Kenosha	249,820	607,683		58
Madison	107,930	147,114		26

	June, 1920 Estimated cost.	June, 1919 Estimated cost.	Per cent. Gain.	Per cent. Loss.
Milwaukee	3,072,507	1,638,469	87	...
Oshkosh	27,031	33,359	.....	19
Sheboygan	39,421	117,058	.....	66
Wyoming—				
Cheyenne	8,930	31,725	.....	71
Total	$131,117,320	$139,020,388	.....	5.7

NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by "The American Contractor":

$1,500,000. Store and hotel building, Warren, O. Warren Hotel Co.

$1,500,000. Plant, Apollo, Pa. Apollo Steel Ct.

$1,200,000. Bank and office building, Wichita, Kans. First National Bank.

$1,000,000. Terminal and light manufacturing building, Milwaukee, Wis. Milwaukee Terminal Co.

$1,000,000. Plant, Indianapolis, Ind. The Chapman Price Steel Co.

$750,000. Hotel, Fort Worth, Tex. Winfield Hotel Co.

$500,000. Warehouse, Chicago, Ill.

$500,000. Garage, Trenton, N. J. E. Neidt Ertle Motor Co.

$400,000. Factory, Chicago, Ill. Chicago Carton Co.

$300,000. Theater, Manitowoc, Wis. George Brothers.

$300,000. Synagogue, Philadelphia, Pa. Beth Shalon Congregation.

$300,000. Building, Minneapolis, Minn. Board of Regents, U. of M.

$250,000. Court house, Frederick, Okla. Tillman county.

$248,000. School building, Indianapolis, Ind. Board of School Commissioners.

$220,000. School building, Allentown, Pa. Allentown School District.

$206,500. Water Works, El Reno, Okla. City of El Reno

$200,000. Hospital, Winthrop, Mass. United States Government.

$200,000. School, Coleraine, Minn. Board of Education.

$200,000. School, Hillsboro, Ill. Board of Education.

$200,000. Factory, Fort Wayne, Ind. General Electric Co.

$200,000. Residence and garage, Shaker Heights, O. Myron H. Wilson.

$180,000. School, Allentown, Pa. Allentown School District.

$175,000. Stores and office building, Lexington, Ky. Chas. H. Berryman.

$175,000. Building, Milwaukee, Wis. Patton Paint Co.

$167,629. Road work, Columbus, O. State Highway Department.

$160,000. Office building, Middletown, O. The Colin Gardner Paper Co.

$150,000. Building, Baltimore, Md. Prudential Oil Corporation.

$150,000. Plant and warehouse, St. Louis, Mo. Liggett & Myers Tobacco Co.

$145,000. Plant, Minneapolis, Minn. Hennepin Atomized Fuel Co.

$105,000. School, Brookfield, Mo. Board of Education.

$100,000. Garage, Easton, Pa. John Neumeyer.

$100,000. Bank building, Stevens Point, Wis. First National Bank.

$100,000. Office and warehouse, Green Bay, Wis. Morley Murphy Hardware Co.

$100,00. Warehouse, York, Pa. Anderson Bros. Co.

$100,000. School, Stanwood, Iowa. Consolidated School District.

$100,000. Bank, Grand Rapids, Wis. First National Bank of Grand Rapids.

$100,000. Engine room, St. Louis, Mo. Swift & Co.

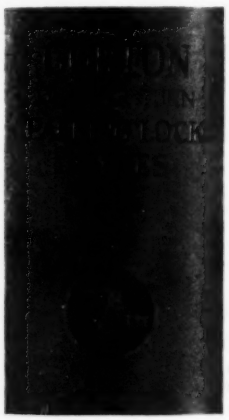
$100,000. Factory, Moline, Ill. The Wright Carriage Body Co.

TRADE LITERATURE

"Buffalo" Heating and Ventilating Systems.

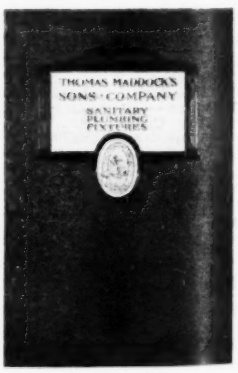
The Buffalo Forge Co., Buffalo, N. Y., has just completed the publication of Catalog No. 700, which fully describes and illustrates the "Buffalo" fan systems of heating, ventilating and humidifying. This is the finest catalog ever printed by the company and is for all practical purposes a handbook on fan systems of heating and ventilating, inasmuch as it is compiled to a great extent from the company's handbook on these subjects. The catalog is bound in a flexible cover, contains 116 pages, and measures 8½x11 inches. It will be found most valuable to heating contractors and engineers because of the wide variety of data contained therein.

Gorton Valves for Heating Systems.



Gorton quarter turn packing lock valves for all systems of steam, hot water, vapor and vacuum heating, are described and illustrated in a 32-page catalog issued by the Gorton & Lidgerwood Co., New York. Particular attention is directed to pages 3, 8, 25, 27 and 30, and it is explained that the use of this radiator valve promotes economy because it is easier to turn off the radiator than to go to the trouble of opening a window and incidentally waste heat. Sectional and detail views of the valve are shown in the first half of the catalog, each of which is described. The Gorton & Lidgerwood air relief system for vapor heating is also treated in this catalog, and there are testimonial letters from heating men about the efficiency of Gorton valves, accompanied by photographs of installations.

Thomas Maddock's Sons Co. New Catalog.



A neat 48-page catalog, measuring 5x7½ inches, is being mailed to the plumbing trade by Thomas Maddock's Sons Co., Trenton, N. J., and its particular feature is that price lists have been omitted. However, under the back cover of the book, is a pocket which contains a price list separate from the catalog, the use of which is carefully explained. The catalog is provided with a stiff blue cover and the descriptive and illustrative matter gives complete information about the company's line of plumbing fixtures. Each fixture is treated in detail, which includes a description, dimensions, roughing-in measurements and approximate weight, and every model is illustrated. Several complete model bathrooms are also shown in the fore part of the catalog.

THE METAL MARKET AND TRADE REPORTS

Steel and Iron.

Production of steel ingots in June was at the rate of about 42,150,000 tons a year, an increase of 3 per cent over the rate in May. The present rate is hardly much more than the June rate, while the production of finished steel is at a lower rate, many mills having closed some of their finishing departments because of accumulations. Production of steel ingots in the first half of this year was approximately 21,000,000 gross tons, or at the rate of 42,000,000 tons a year, as compared with a production in 1919 estimated at about 34,000,000 tons, and with 43,619,200 tons—the record output—reported for 1917. The heaviest production before the war was a trifle over 30,000,000 tons. On the basis of 50,000,000 tons capacity a year, the steel mills during the first half of the year averaged an operation of about 84 per cent, a very high rate considering all difficulties. The railroads certainly did not operate at anything like 84 per cent of capacity.

Pressure for deliveries of tubular goods keeps up. The demand for oil well goods is heavy, and there must be a constant development in order to maintain production. In standard steel pipe particularly, the demand for deliveries is heavy. Prices for standard pipe represent substantially two markets only, the 57½ per cent list of the leading interest, adhered to also by one independent, and the 54 per cent list, which is standard with most of the independents. While the pipe mills have been affected by car shortage, their condition has not been so serious as that of some other mills by reason of the wider variety of cars they can use. The mills have large stocks, but it is not uncommon for pipe mills to carry large stocks.

Production and shipments of sheets are both curtailed further by the continued car shortage. In the case of production the difficulty is the supply of open-top cars. Sheet mill operators of the leading interest are down to 65 per cent, representing a considerable drop, while some of the independents are shorter of cars than formerly. The accumulation of sheets is now in excess of 50,000 tons, and the market is very quiet. On the whole the consumptive demand is not as heavy as it was three months ago. The market stands at the basis of the Industrial Board schedule, 4.35 cents for black sheets, 3.55 cents for blue annealed, and 5.70 cents for galvanized.

There is a market for deliveries of pig iron, guaranteed prompt or nearby, but there is no market for pig iron to be shipped in the indefinite future. All consumers of pig iron feel that, if transportation conditions become such as to insure a better movement of pig iron, they will get the iron they have already contracted for and will not need any for later delivery. The result is a distinctively inactive pig iron market, the small tonnage that passes through the market being for prompt delivery, with prices, of course, firmly maintained and an occasional report of an advance. Basic and Bessemer iron continues strong and difficult to obtain at a $46 minimum in the valley. Because of the increasing cost of fuel due to irregular operations of ovens and inferior grades of coke produced, some producers are adopting new and higher differentials for silicon variations. The spot market for coke continues to advance, $18 being easily obtainable for furnace coke, with $19 and possibly higher for foundry coke. Prices for pig iron are quoted as follows:

No. 2X, Philadelphia	$48.15@49.35
No. 2 Southern, Birmingham	42.00@42.50
No. 2 Buffalo	45.00
No. 2 Chicago	45.00
Basic, Valley, furnace	46.00
Bessemer, Pittsburgh	47.40

Copper.

Copper producers are showing little concern over the fact that buyers have become less active and business showed a decrease towards the end of last week, owing to the indication that buying movement is expected to develop with a growing pressure in the very near future. Ordinarily the orders placed by domestic and foreign consumers since early in the month would have attracted little attention, if it were not for the stagnant condition of the market during May and June. The disappearance of low prices, together with diminished stocks in the open trade, forced several users to go to producers for needed supplies, but the large operating interests say the real boom for third-quarter requirements has not really begun as yet, and that they were satisfied to book orders at the 19 cents a pound level, although every indication pointed to an upturn of the market on the concentrated buying movement expected.

Tin.

Although the tin market did not make any material progress last week in so far as prices are concerned, there is a large feeling of satisfaction among traders that the market undertone is improved and that the outlook for continued and possibly growing firmness from now on is brighter than at any time in the past two months. The fact that London gained gradual strength through the week on much improved money conditions and shortage of Straits futures is pointed to as clear indication as to how the market may be expected to go this week. The 51 cents a pound level reached by spot tin on Monday and Tuesday brought the market back to the position held by it on June 3rd, from which day on the price movement had been downward. Tin closed the week but ½ cent lower on weak exchange, but the final settlement of the international situation as regarding German coal supply to the Allies is expected to put an entirely new phase on the British tin market, and, through it, the domestic trade. Relief in the railroad situation last week is expected to bring consumers into the market, wheras all the business reported was only with speculators.

Lead.

It is very difficult to gauge the open lead market, owing to the extremely light amount of business done, the shortage of prompt deliveries limiting sellers' offerings and difficulty of purchase, keeping buyers' activities at low ebb. The producers' quotations of 8 cents, New York, and 7.75 cents at East St. Louis can hardly be said to represent the actual market, because it is generally understood in the trade that no lead is obtainable at these prices. The low price level placed by the leading interests on spot lead has the double-edged effect of offsetting possibilities of importations on the

low British market basis and also to keep the ore at a price suitable to the buyers. In some circles it is said no lead is procurable in New York under 9 cents a pound, and little at St. Louis under 8.80 cents to 9 cents. London closed the week 5 shillings lower than on July 9th, as regards spot lead, and 10 shillings lower on futures.

Zinc.

It is not usual that a market will remain firm in the face of an absence of demand, but spelter at this time enjoys that exceptionally strong statistical position as a result of the large curtailment of production the past three weeks, and the surprisingly light offerings of sellers. Buyers freely offered 7.90 cents a pound for nearby St. Louis delivery, pending a gradual upward movement of prices on shortage of supplies, but consumers are still showing little interest in the market. Holders on the Metal Exchange asked 8 cents for July, and 8.05 cents for August and 8.10 cents for later months, and with perhaps a clipping of 10 points off these quotations the actual zinc market may well be gauged.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Antimony (Chinese and Japanese)	7½ cents per lb.
Solder, No. 1	34½ cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	15 to 15¼ cents	16¼ cents
Copper, light	13½ to 13¾ cents	14¾ cents
Brass, heavy	9 to 9¼ cents	10¼ cents
Brass, light	7¾ to 8 cents	9 cents
Brass turnings	9½ to 10 cents	11 cents
Lead, heavy	7¾ to 8 cents	9 cents
Tea lead	5 to 5⅛ cents	6⅝ cents
Scrap zinc	6 to 6¼ cents	7¼ cents
Solder joints	10 to 11 cents	12 cents
Mixed babbitt	10 to 12 cents	13 cents
Composition turnings	13½ to 13¾ cents	14¾ cents
New brass clippings	10½ to 11 cents	12 cents
Tin foil	34 to 36 cents	37 cents
Cast aluminum	23½ to 24 cents	25 cents
Cocks and faucets	12½ to 12¾ cents	13¾ cents
New zinc clippings	7 to 7¼ cents	8¼ cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

Heavy yellow brass	10½ to 11 cents	12 cents
Brass, light	8½ to 9 cents	10 cents
Brass borings	13 to 13½ cents	14½ cents
Brass turnings	9 to 9½ cents	10½ cents
Red brass	14½ to 15 cents	16 cents
Copper, crucible	15 to 15½ cents	16½ cents
Copper, heavy	14½ to 15 cents	16 cents
Copper, light	13 to 13½ cents	14½ cents
Lead, heavy	7 to 7⅛ cents	8 cents
Tea lead	5¼ to 5½ cents	6½ cents
Zinc	4¾ to 5 cents	6 cents
Solder joints	10 to 10½ cents	11½ cents
New aluminum clippings	25 to 26 cents	27 cents
Cast aluminum	24 to 24½ cents	25½ cents
Block tin pipe	40 to 45 cents	46 cents
Tin foil	30 to 35 cents	36 cents
Mixed babbitt	7½ to 8 cents	9 cents

The Chamber of Commerce of Nogales, Ariz., it is announced has joined with Charles Butters, mining expert, of New York and San Francisco, to promote the formation in Mexico of an association of silver mine owners and silver producers to rebuild the abandoned mints throughout the nation, and thus bring about once more the free and unlimited coinage of silver.

THE BUILDING OUTLOOK.

Contracts awarded during the week from July 3rd to July 9th approximate $46,432,400 in valuation. During the same week of 1919, including the Fourth of July, the valuation of awards was $77,983,985. Contemplated work for the week's period this year ending July 9th in estimated valuation is $59,826,700, says "The American Contractor." Of this amount $9,477,200 is for business buildings, $7,948,000 for industrial buildings, $17,550,500 for public works and public utilities and $11,915,500 for residential buildings.

During the first six months of 1920, contracts have been let amounting to $1,542,585,000 and numbering 31,308. Of the total, 26 per cent has been for industrial building and 22½ per cent for residential building.

June building permits, as is shown elsewhere in this issue, show a rally from May. Comparing figures from thirty-one important cities shows a 3½ per cent gain. With the June rally a fact, it does not take wild speculation to predict that should an appreciable per cent of inefficiency be ironed out of the railroads when the wage awards take effect and when freight increases give revenue, the pickup will continue. Of course, it is going to take a long time to build more cars and more terminal facilities, but even with present equipment material gain in efficiency could be made. It must be remembered that the June increase over May was accomplished in the face of a marked congestion of the transportation system and in the face of tight money and abnormal labor conditions.

THE IRON AND STEEL SITUATION IN ENGLAND.

The Main Feature is Need of Greater Production.

Famine conditions mark the pig iron trade, and this shortage is universal all over the country, writes United States Consul Keith Merrill from London, England, under date of June 25th. The British Government has not yet taken steps to restrict imports of this commodity, perhaps because the makers themselves have already imposed a voluntary embargo on exports, relaxed only in exceptional cases.

The need for an expansion of output is the outstanding feature. Consumers declare that their works are threatened with complete stoppage unless the position at once materially improves. There would appear to be no criticism as to quality or price, all grades finding a ready sale at full maximum prices; where possible, supplies are eked out with scrap. It is essential that more furnaces be put into operation; many are standing idle, but makers hesitate to take the risk, for though coke at the moment is a little more plentiful, it is not known how long this condition may last.

Prices generally are unchanged, and at 217s. 6d., No. 3 Cleveland G. M. B. is still the cheapest iron in the country. All the lower qualities command the same price, but for No. 1 230s. is demanded, while East coast hemitate mixed numbers readily commands 260s. per ton.

There is a distinct lull in the manufactured iron and steel trade. Prices generally continue very firm, and makers have plenty of orders. Values, however, have now reached such a point as to afford purchasers grounds for alarm: there is an increasing reluctance to follow the upward trend. It is asserted that shipbuilders are even endeavoring to cancel contracts. The outlook in the steel trade is very uncertain, but as general requirements are so heavy no slump is anticipated.

Little business has been done lately in tin plates and sheets. Markets are steady, and no inclination is apparent to force sales. Large sheets are firm on the whole, but galvanized corrugated are easy at around £54 per ton for 24-gauge, in bundles, f. o. b.

NORWEGIAN IRON AND STEEL TRADE TO BE SELF-SUPPORTING.

The Norwegian Ministry has embarked on a policy of developing and supporting the iron and steel industry, with a view to making the country independent of foreign supplies as far as possible.

One of the schemes is the large state-supported iron and steel works at Narvik, in which it is estimated that an annual production will be achieved of 169,000 tons of coke, 125,000 tons of pig iron, 125,000 tons of steel billets, 25,000 tons of phosphate, 95,000 tons of rolling products.

During the war Norway experienced great difficulties owing to the shortage of iron and steel manufactures, which she had formerly obtained almost exclusively from Germany. There is consequently a strong feeling in the country at the present time that Norway should smelt her own iron ore. A grant has now been made to a well known Trondhjem firm, who are to erect an experimental installation for the reduction of oxidic iron ore by means of gas heated to 900-1,000 degrees celins. After crushing has taken place the iron in the ore is to be separated magnetically and the superfluous stone, etc., is to be carried off without undergoing smelting. It is claimed that this process produces an iron which is free from sulphur, and that the phosphorus present disappears during the separation. The temperature at which the process is conducted is lower than the temperature for the reduction of phosphates. It is similarly claimed that the product is free from carbon, and that it is therefore well suited for the production of steel.

The gas employed for reduction is to be produced by the introduction of a fluid fuel or gas distilled from coal into an electric high-tension flame of the kind used in the nitrate industry.

It is stated that this process was invented in Sweden, and it is considered that it is particularly suited for low-grade Norwegian ore. The Norwegian Government has also been authorized to take shares in a third company up to one-third of the company's capital (provided the sum does not exceed 500,000 kroner) for the purpose of producing pig iron by the electric process. The Government has also been authorized to guarantee a loan of 150,000 kroner to another company for the production of the electrodes necessary in connection with the foregoing.

Northwestern Plumbing & Heating Co., of Grand Forks, N. D., has the contracts for the plumbing and heating of the new school at Hannah, N. D. and the school at Hoople, N. D.

T. P. Riley, of Fargo, N. D., has the contract for the mechanical equipment of the new school at West Fargo, N. D.

J. W. Molley, of Dickenson, N. D., has the contract for the mechanical equipment of the new school in that city.

Spriggs Bros., of Grand Forks, N. D., have the contract for the mechanical equipment of the new school at Grafton.

P. J. Brown, of Tyler, Minn., has the contracts for the mechanical equipment of the new school at Astoria, Minn.

Shore Plumbing & Heating Co., of Worthington, Minn., has the contracts for the mechanical equipment of the new school at Chandler, Minn.

American Heating Co., of Duluth, has the plumbing contract, and M. J. Harney, of Duluth, the heating contract on the new Institute Hall in that city.

Wahpeton Plumbing & Heating Co., of Wahpeton, N. D., has the contracts for the installation of plumbing and heating in the new school at Deer Creek, Minn.

Whittington & Kelly, of Crawfordsville, Ind., have been awarded the contract to install plumbing and heating systems in the Service Auto Co.'s factory in that city. This firm will also install plumbing and heating in a $15,000 residence in Attica, Ind.

President D. F. Durkin, Jr., Sends Message to Members of N. A. M. P.

D. F. Durkin, Jr., of Philadelphia, president of the National Association of Master Plumbers, has just sent the following self-explanatory message to the members of this organization:

"Greetings: We are now entered upon the active administration of your affairs, having opened the National office at 108 South 20th Street, Philadelphia, Pa. This office is in charge of Mr. George F. Uber, secretary, and Mr. John F. Whitaker, executive clerk, and all future communications should be sent to this address. Within a short time the names of directors and members of standing committees will be announced through the columns of the trade press.

"It is our intention to make an energetic effort during this term for a substantial increase in membership and we invite your co-operation in making this a decided success. We recommend to your attention the trade extension movement. The convention has given this work its heartiest approval. It is a valuable asset to the contractor and we must use it ourselves and bring it to the attention of the non-members.

"We will from time to time advise you of the work of the National Association from this office and we ask that you co-operate with us in building a bigger association.

"Fraternally, D. F. Durkin, Jr.,

"President."

Cincinnati Master Plumbers' Annual Outing.

Athletic events and various other entertaining contests featured the annual outing and basket picnic of the Cincinnati Master Plumbers' Association at Lookout Grove, at Mt. Healthy, O., Sunday, July 18th. Amusement features during the day included baseball games, running races for members of the Association and members of their families, special games for ladies and other games in quiet nooks for the men. Prizes were awarded winners of the different events during the day. More than 500 members of the Association and their families attended the outing and picnic. The entertainment committee, of which Edward Frank was chairman, included: William Greenburg, J. A. Klason, James Doyle, Frank Heider, William Keck, and George Young, Jr.

Alexander Smith.

Alexander Smith, a pioneer plumber of Sacramento, Calif., died recently at his home in that city, in his 79th year. He was one of the first plumbers in the capital city, having come from Scotland when a boy. He was a member of the local Masonic order.

Walter A. Mendell.

Walter A. Mendell, a master plumber of South Camden, N. J., died at his home in that city on Tuesday morning, July 13th, in his thirty-sixth year. Mr. Mendell was a member of the Camden Lodge of Elks and the Camden Lodge of Moose. His death is the cause of wide regret among his fellow business men. He is survived by his wife and three children.

The city council of Rhinelander, Wis., has just appropriated funds for the construction of a public comfort station in the central part of that city.

"ECONOMY" REPAIRS ARE PERMANENT

ABOVE is an illustration of our spacious new plant which covers over one and one-half acres of ground.

This modern structure containing every scientific appliance to speed the manufacture of ECONOMY Boiler Seal, will give us ten times the capacity of last year.

The rapidly increasing demand for ECONOMY Boiler Seal has made this expansion necessary. With the added facilities, we are in position to ship promptly all orders, large or small.

This news is welcomed by the jobbers who handle ECONOMY Boiler Seal—the best preparation of its kind ever invented.

SAVES 100 TIMES ITS COST

ECONOMY Boiler Seal makes repairs in leaky hot water and steam boilers that are *permanent*.

ECONOMY Boiler Seal is equal in value and results to three cans of any liquid preparation on the market. It locates and stops leaks that the other kinds fail to repair. It saves 100 times its cost, and saves days sometimes, of labor. It saves buying new castings and sections.

And RIGHT NOW, men, is the time to put ECONOMY Boiler Seal to good use. If your Jobber cannot supply you, send your orders to us direct.

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

Chicago and Vicinity.

G. Frank Winkler, 841 North State Street, has secured the contract to install the plumbing in ten stores and a loft building now being erected on the southwest corner of Wabash Avenue and Van Buren Street, for the Canton Tea Gardens, at a cost of $250,000.

A. C. Flynn, 4709 South Halsted Street, will install the heating system in a $10,000 remodeled section of a store at 27 North Dearborn Street, for Endicott, Johnson & Co.

Architects Tallmadge & Watson, 188 West Madison Street, have finished plans for several manufacturing buildings that are to be erected for the Commercial Furniture Co. in the block bounded by Grand Avenue, Washtenaw Avenue, Superior Street and California Avenue.

Architects William A. Otis & Sons, 6 North Michigan Avenue, have completed plans for a new $100,000 film exchange building to be erected at 910-914 North Wabash Avenue, for James F. Porter.

Architects Schmidt, Garden & Martin, Capital Building, Springfield, have completed plans for the new $1,000,000 hospital to be erected in Chicago for the State of Illinois. This project will consist of approximately 20 buildings, to be erected in the plot surrounded by Lincoln, Wood, Polk and Taylor Streets.

Other Cities in the State.

William F. Hildeman, Chicago Heights, has the contract for the installation of plumbing and heating in the $50,000 one-story bank building that is to be erected in Steger for the Steger State Bank.

Edward J. Maag, 414 Illinois Avenue, East St. Louis, will install the plumbing in a new $75,000 building, which is to be erected in that city for Armour & Co.

The Alton Plumbing & Heating Co., Alton, has the plumbing contract, and Elliott & Barry, 1426 Olive Street, St. Louis, Mo., the heating contract on the Gillham grade school in Alton.

Albrecht Bros., 208 Main Street, Kewanee, have secured the contract for the construction of four extensions of 6-inch water mains in that city. Each extension measures about 1,500 feet.

Wisconsin

Milwaukee.

Dearsley Bros., 457 Jackson Street, and L. A. Riemer, 650 Third Street, are to install the plumbing and heating, respectively, in a new residence and garage to be erected on Newberry Boulevard for Dr. R. G. Sayle.

O. P. Zimmerman, 819 Winnebago Street, has the contract to install the plumbing in a new meter shop to be erected for the Board of Public Works on Market Street, south of Johnson Street.

Other Cities in the State.

Leo Zwiebel, Burlington, is to install the plumbing in the two-story bank building which is to be erected in that city for the Burlington National Bank.

Carl Riggins, Oconto, has the contract for the heating and plumbing in the $25,000 garage and salesroom to be erected in Oconto Falls for the Oconto Falls Motor Co.

Minnesota

Minneapolis.

B. H. Nelson, 734 East Lake Street, has the contract for plumbing in the Farrington Residence at 3740 Bryant Avenue, South.

Sachs & Karkoff, 1305 Sixth Avenue, North, have the contracts for the plumbing and heating of the Schwartz Flat Building at 615 East Seventeenth Street.

Wm. F. Meurer, 1515 Hennepin Avenue, has contracts for the plumbing and heating in the remodeling of the Evanston building at Second Avenue, South, and Sixth Street.

Western Heating Co., 13 East Thirty-Sixth Street, has the contracts for the plumbing and heating of a new duplex dwelling at Franklin and Fremont Avenues for Albert Anderson.

The American Plumbing & Heating Co., has the contracts for the plumbing and heating of the factory building being erected by the Berger Mfg. Co. at Ulysses and Broadway Streets, North East.

J. M. Jacobson Co., 324 Cedar Avenue, is making changes and additions to the plumbing and heating systems in the Egequist Bakery Plant at 1321 East Franklin Avenue.

Hughes Heating & Plumbing Co., 1514 E. Franklin Avenue is installing the plumbing in the Earl Building at 1501-1503 East Franklin Ave.

St. Paul.

Frank Eha will install the heating and M. J. O'Neil the plumbing in the boiler room and tank house being erected by the Auto Owners Tire Corporation at Wabash and Vandalia Streets.

H. Kelly & Co., 925 Plymouth Building, Minneapolis, have secured the contracts for the plumbing and heating of the new warehouse being erected at Pascal and University Avenues, St. Paul, for Montgomery Ward & Co., of Chicago. The building will be of re-inforced concrete, eight stories high, and will cost about $2,500,000.

T. J. Conroy, 400 East Seventh Street, has the plumbing contract, and W. S. Mathieson, 592 Ottawa Avenue, the heating contract on the addition now being built to the administration building at the City and County Hospital.

Chas. J. Bergstrom, 820 Payne Avenue, has the contracts for the plumbing and heating on the Bank Building being erected on Wabash Avenue, between Seventh and Eighth Streets, for P. M. Reagan.

Other Cities in the State.

H. Kelly & Co., of Minneapolis, have the heating contract, and W. S. Mathieson, of St. Paul, has the plumbing contract for the Recitation Building, being erected at Morris, Minn., for the State Board of Control.

American Heating Co., 1813 Winter Street, Superior, Wis., has the contract for the heating and ventilating, and Anthony G. Cherne, of Buhl, Minn., has the contract for the plumbing of the new school building now being erected at Buhl, Minn.

Stack Bros., of Duluth, Minn., have secured the contracts for the installation of the mechanical equipment in the new school building at Cass Lake, Minn.

Cuddy Plumbing & Heating Co., of Mankato, Minn., has the contracts for the installation of plumbing and heating in the new creamery at Rapidan, Minn.

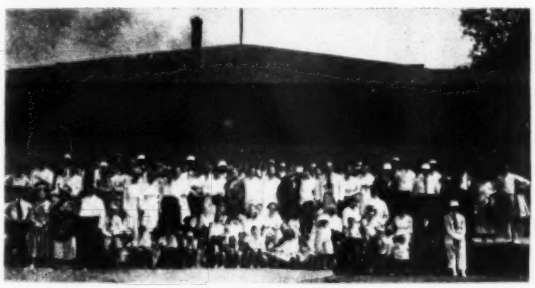
Moorhead Plumbing & Heating Co., of Moorhead, Minn., has the contracts for the mechanical equipment of the new school at Moorhead.

Indiana

Gary Sanitary Engineers' Annual Outing.

A splendid day, much enthusiasm and a good crowd, marked the annual outing of the Gary Sanitary Engineers on Saturday, July 17th, at Robertsdale Beach, near Hammond, Indiana. Automobiles assembled on Broadway in Gary, and the procession started for the beach about 10 o'clock. Badges and programs, with checks for drinks, were distributed to the picnickers, when the picnic ground was reached, and a grand rush was made by the younger set for the soft drink stand where the dust from the road was slowly washed down.

Being nearly noon when the celebrities arrived, little activity was shown, until the announcement for dinner was made. A small road house, several squares from the scene of joviality,



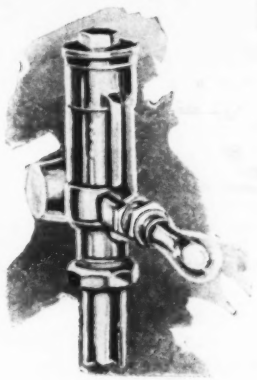
Gary Sanitary Engineers, Their Families and Friends at Their Annual Outing at Robertsdale Beach.

was chosen as the place for the repast. An elegant fish dinner was served, and, apparently, justice was given to the meal by all. H. H. Highlands, to whom was given the honor of bringing the delegation to the feed, was well pleased with the way the fish was served by the looks of his plate on adjournment.

Having fully recovered from the effects of such a meal, the crowd returned to the beach where the races were run. The first race, for children under ten years of age, was won by Thomas Matimore, who received a pair of water wings for his efforts; the second race, for girls from ten to fourteen years, was won by Kathryn Henderson, a kodak being her reward; the third race, for boys from ten to fourteen years, was easily won by Claude Kingerman, who was rewarded with a pocket knife. Mrs. Eibel carried away the silk parasol for the Master Plumbers Wives' race, which was the fourth event. The single ladies' race was also won by a member of the Eibel family, Gertrude being her name. J. B. Rotchford won the 150-yard dash for the master plumbers, and was rewarded with a handsome silk shirt. Miss Murray won the silver sandwich plate for the ladies' potato race. The men's open race was won by C. L. Crook, although several handicaps were given to the older members. C. J. Miller, of Crown Point, and Henry Heuck, of Gary, were victorious in the three-legged race, and won silver pencils.

A. W. Baker was the winner in the sack race, and was

The Gary Sanitary Engineers' Baseball Team.



CLEVELAND FLUSH-VALVE

Recommends Itself

AFTER all is said and done, unless a product has *real merit* and is able to deliver the service expected of it, sooner or later it is replaced by something better.

The Cleveland Flush Valve is sold on honor. Stands on its own merits and gives satisfactory service year in and year out.

Plumbers prefer to install the CLEVELAND Valve rather than a closet tank. It costs less, requires less work to install, does away with tank troubles of every kind, and makes a neater job.

Fits all standard equipment. Adaptable to any style bowl.

Made with Push Button, Lever and Oscillating Handle.

Write for circular matter

Cleveland Flush Meter Company

Noble Court and West Second St., Cleveland, O.

This Better Tank Helps You Make More Money!

The Pfau Copper Tank means bigger profits for you, because it costs less for the highest quality—and also because it is so light in weight that one man can install it easily. Yet the 24 ounce pure lake copper of which it is made is so sturdy and durable that there never is a leak of any kind. Furthermore it will not crack, dent or chip, as earthenware tanks often do.

With its perfect snowy-white finish which stays on as long as the tank lasts, this Pfau Copper Tank is undoubtedly the most satisfactory tank on the market today. Also we GUARANTEE IT FOR 5 YEARS! Prompt deliveries, too. Ask your jobber—or write us.

WHITE-COPPER PFAU TANK

The Pfau Manufacturing Company
Cincinnati, Ohio

given two pairs of silk socks. The pea shelling contest, which was to have been the next on the program, was not carried out because of the failure to procure the peas, but instead a men's race was run for those who had failed to win in previous contests. This race was won by F. Barry. The last event on the program was the running long jump, which was won by C. L. Crook, who hit the dust about 15 feet from the board.

Following the awarding of prizes, a grand boxing contest was staged under the trees in the grove. The mit experts were Henry C. Heuck and Bill Burke. Three one-minute

The Salesmen's Baseball Team at the Gary Sanitary Engineers' Outing.

rounds were fought, and although both put over several wallops, the referee, Frank Simard, announced that no decision could be rendered because of the good showing both made.

The bout being over, the ball teams were assembled and photographed. Being almost time for the late afternoon meal, the crowd was adverse to watching the game. Although the teams were minus spectators, they played, and at the end of the eighth inning the White Sox Plumbers had the "The Sailors Who Sale" put in the back ground by a score of 16 to 9. Charles Miller, playing for the plumbers, was a bear on first base, having ten put-outs and not missing a throw. Clinton C. Rood, playing for the salesmen, made several spectacular catches while in right field, and one in the short stop's territory; several good bingles were also chalked up for him. The plumbers had Henry Heuck and Huber Highlands on the slab, while the salesmen designated Larry Zinser and Frank Barry to twist the pill for them.

The Committee in Charge of Races and Games: Larry Zinser, Clinton C. Rood and Frank Barry.

Having made seven runs in the first inning, the plumbers were never in danger after that, and in less danger after the fourth, when three runs were made in the second, two in the third and two in the fourth, making a total of 14 runs in four innings. The salesmen did not score until the fourth, when several errors and a good hit by Rood netted three runs. The game was called at the end of the eighth. It was a good victory for the plumbers, and the salesmen were good losers.

A chicken supper was served at the same road house about 7 p. m., and was followed by a dance led by Huber Highlands. All who remained for the supper and dance enjoyed themselves immensely, and the outing was voted a grand success.

New Plumbing Code Proposed for Vincennes.

Rules and regulations governing the installation of plumbing are set forth in a new plumbing ordinance which was introduced for first reading in the city council of Vincennes, Ind., on Monday night, July 12th. An ordinance with like intent, which was presented to the council a few months ago, was withdrawn following the first reading. The new ordinance, in brief, does the following:

Vests in the mayor the power to appoint a plumbing inspector, who must be a practical plumber. Inspector is to serve for one year, or until his successor is appointed and qualified. His bond is to be $500.

Makes it unlawful for any person, firm or corporation to do "any plumbing" without obtaining a license from the city clerk, the license to be issued only after filing of a $500 bond. The license fee for master plumbers to be $25 a year.

Before any job of plumbing or plumbing work, minor repairs excepted, is started, the plumber employed to do the work must make application to the plumbing inspector. He will be required to pay to the clerk $1 for the first fixture installed and $1 each for each additional fixture, proposed to be installed, which will discharge into a sewer, the fees from this to be given to the plumbing inspector for his remuneration. Repairs will include replacing of an old fixture, but will not include additional fixtures, lines of soil, waste, vent or leader pipes.

The ordinance especially provides that no soil, drain or vent pipe or plumbing shall be concealed from view until after the work has been inspected and approved. Plumbers will be required to notify the inspector when their jobs are ready for inspection. Water cannot be turned into the fixtures until after the inspections are made except for the purpose of inspection.

Inspection must be made in six hours after the plumber gives notice or must be fixed for an hour within twenty-four hours. The first inspection must be made when the vent and soil pipes have been fixed and regulated. Final inspection must be made after the completion of the work and after the water has been turned on and the traps filled. Certificates of inspection are to be issued.

The minimum fine for violations is fixed at $5. The maximum is fixed at $100. It is stipulated that "until the offender shall have fully complied with all provisions, no permits shall be issued to him." The ordinance provides ten rules which are intended to cover all sorts of plumbing jobs, and the material and equipment required for such. The committee which drafted the ordinance is said to have had assistance from some of the leading plumbers of the city.

South Bend and Vicinity.

Building activities in South Bend suffered a slump during the month of June, according to figures compiled by W. D. Teeple, building commissioner. More permits were issued that month than in May, but the valuation of buildings fell off. In June 292 permits were issued with a total valuation of $460,310. In May 261 permits were issued with a total valuation of $570,571.

Plumbing contractors at Elwood, Ind., are interested in an ordinance now pending before the city council which would prohibit outdoor toilet of any description in a section near the center of the city. The measure will come up for final reading at the next meeting. Several hundred property owners are affected by this ordinance, but nearly all regard it as a public health measure of great importance and have expressed the hope that it will be passed. If the ordinance becomes a law it is planned to extend the limits in which toilets are prohibited until the entire city is included.

Master plumbers at South Bend, Ind., at a meeting Thursday refused to meet a demand made a month ago by the journeymen plumbers that beginning July 15th wages be advanced one dollar a day. The master plumbers decided that since the journeymen plumbers signed an agreement last January to refrain from an attempt to force additional increase for a year, their demands would be refused. The journeymen's agreement has five and one-half months to run before new demands can consistently be made, the master plumbers declare. It is understood that a threatened walkout of the plumbers did not materialize, because they are awaiting the arrival of a representative from the national union, who is to come to South Bend to investigate the situation. The letter from the local union to the master plumbers was sent out about the middle of June and intimated that a strike would be called immediately unless the increase was granted. "We feel that the demands of the journeymen plumbers for a dollar increase at this time is unreasonable and in direct violation of their agreement," said Thomas Williams, president of the Master Plumbers'

WOOSTER CHINA

PLATE NO. 55

One Minute, Please! Mr. Jobber

Are You

getting your share of Closet Business on New Factory Buildings?

By introducing and featuring the Wooster Factory Closet Bowl with Seat Integral and Non-Soiling Features, you will be creating an advertising campaign which will mean a healthy increase in sales.

The elimination of the wood seat on water closets in factory installation is a step forward in factory sanitation.

Write Today for Prices

The Wooster Sanitary Co.

Clarksburg, V. Va.

PLANTS:

Clarksburg, W. Va.
Fredericksburg, Ohio

MANUFACTURERS OF
Plumbers Vitreous China Earthenware

Advice for Dull Times

Jones the Plumber wrote Bill

Dear Bill:

My business has been slowing down; first a shortage of materials and now the curtailment of credit for large building operations.

I'm going to make Kenney Showers and similar lines help pay my expenses. Looks like we're going to have a long hot summer and besides a recent circular tells me Kenney Shower advertising is greater than ever, and every advertisement features the sale of Kenney Showers through the local merchant plumber.

That's good business for you and me; but let's get all there is in it. Then when conditions change and people resume building, we'll probably have a lot of new prospects for new plumbing fixtures.

Yours,

J. J.

Write for Kenney Shower Sales Plans. They are in keeping with the Trade Extension idea. Over a thousand merchant plumbers are now making extra profits through the aid of these plans.

THE CURTAINLESS SHOWER COMPANY
507 FIFTH AVENUE - - NEW YORK

Association. "We gave the matter careful consideration and decided to refuse the increase. We wish to play fair, but we do not intend to be imposed on."

Muncie.

A meeting of the Sanitary Engineers in Muncie was held recently in that city to discuss plans for the State Convention that is to be held on March 14, 15 and 16, 1921. It was the intention of E. Kanney, president of the Indiana Society of Sanitary Engineers, to call the men together and formulate some plans for the round-up, but to his surprise he found the members had already been doing active work to this end. It is the desire of the members of the society to have in its ranks every master plumber in the state.

The Williams Plumbing & Supply Co., 1025 East Main Street, Muncie, has the contract to install plumbing and heating in the General Motors' sales room and office, and the plumbing and heating in the Hoosier Auto Parts Co.

Philip Stauf, 215 West Main Street, Muncie, is installing the plumbing and heating in M. L. Altschul's $20,000 residence being erected in this city. Mr. Stauf has also secured the contract to install the plumbing in the comfort station to be erected in the Merchants' Bank building.

Hutzel & Co., 400-402 East Main Street, Muncie, have secured the contracts to install the plumbing and heating in the Sheridan Motors Co. building, the Washington High school in East Chicago, and the Popular Grove school being erected in Bluffton. This concern is also completing the plumbing and heating in the Delaware County Orphan Home, and the heating in the Nash Motor Car Co.'s new building in Milwaukee, Wis.

Other Cities in the State.

C. M. Hegnian & Co., Dunkirk, have recently taken over the business of K. R. Monroe ,and are now installing heating systems in the new Citizens State Bank building in that city, and in a number of smaller buildings.

Tibbetts & Adkins, Union City, have secured the heating contract on the new freight house which is to be erected in Muncie.

C. F. Durffner & Son, Main Street, Avoca, are completing the installation of plumbing and heating in the DuPont Silk Mills.

W. D. Harrold, 523 Park Avenue, Kokomo, has secured the contract to install plumbing in 100 houses that are being constructed for the Pittsburgh Plate Glass Co., in that city.

Kentucky

Louisville and Vicinity.

The slump in building which was noticed in Louisville two months ago has taken wings and fled to other parts. Building permits for the month of June, according to a report just issued by the office of the Building Inspector, aggregated over a million dollars, and the number of permits increased correspondingly. The trouble plumbers are fighting now is the scarcity of material, one jobber stating that he had no difficulty in selling everything he could get his hands on.

The time allowed to P. H. Meyer, defendent in the case of the Louisville Master Plumbers' Association versus P. H. Meyer, which was settled in favor of the plaintiff, in which to appeal from the decision of the Circuit Court has elapsed without Mr. Meyer taking that step. It was generally thought until a few days ago that he would carry the case to the higher courts in an attempt to secure a reversal.

A meeting of the Louisville Master Plumbers' Association has been called for the coming week. It will be the first meeting held in July. No exceptionally important matters are on the book for discussion, and only routine business will be disposed of.

Herrman Bros. have secured the contract let by the Southern Baptist Theological Seminary for plumbing work on its building at 500 West Broadway.

A fine contract will be let when construction starts on a new hotel to be built in Frankfort, Ky., by the Weitzel heirs, owners of the old Capital Hotel, which burned down two years ago. The Court of Appeals has held that, according to the terms of the deed given the Weitzels by the City of Frankfort, a hotel must be built on the site.

Massachusetts

Boston and Vicinity.

The Franklin Union Heating and Ventilating Society, composed of alumni of the heating and ventilating classes of the Franklin Union of Boston, held its annual outing on July 10th at Suntaug Inn., Lynnfield, Mass. There have been 91 graduates of the Union's heating and ventilating classes, and of these 53 were present at the outing. The run from Boston was made by automobile and after a good dinner there was an interesting program of sports, including a ball game between teams composed of salesmen and of engineers. The official scorer gave the game to the salesmen by a score of 14 to 13. The outing was in charge of H. C. Cornell, assistant manager of the United States Radiator Corporation office at Boston, who is president of the alumni association, and Harry G. Dodge, of the Gurney Heater Co., the secretary. Robert Crocker, of the Massachusetts Heating & Ventilating Co., was chairman of the transportation committee, and J. R. Reardon, of Reardon Bros., Lynn, had charge of the sports and other outing features.

President G. Wilbur Thompson, of the Massachusetts Association of Master Plumbers, with Secretary W. H. R. Goudey and members of the state executive board are planning a three-day "missionary" tour through the western part of the state, beginning on July 27th. The trip will be made by automobile, starting from Boston, and stops will be made at Fitchburg, Greenfield, Pittsfield and Westfield and possibly at some other points. At each place, arrangements will be made in advance for meetings of master plumbers and the state officers will endeavor to arouse their interest in association work. The regular monthly meeting of the executive board will be held en route, probably at Westfield. William Milne, of Pittsfield, a member of the board, is making many of the arrangements for the entertainment of the tourists.

Other Cities in the State.

The Master Plumbers' Association of New Bedford and Vicinity has issued invitations for the organization's eighth annual outing and clambake, to be held on Wednesday, August 4th, at Bayside Pines, Marion, Mass. Plans are being made for an attendance of about 100, including representatives of the state association, supply men, salesmen and other special guests.

The Haverhill and Lowell Master Plumbers' Associations are making plans for summer outings during August, but have not yet announced the dates.

Mayor Sullivan, of Worcester, drafted the services of a four-year-old girl to assist him in awarding a heating contract a few days ago. When bids for installing a heating plant in the Tatnuck school addition were opened it was found that William P. Wheeler and F. C. Hughes & Son, Worcester concerns, had submitted identical bids lower than all the others. Both bid $7,325. Mayor Sullivan and Superintendent of Public Buildings George C. Halcott, who had opend the proposals, were in a quandary. The mayor noticed a little girl in the outer office with her mother and writing the names of the two low bidders on slips of paper, placed them in his hat, and asked the little girl to draw one out. She drew the slip bearing the name of Hughes & Son, and the mayor awarded the contract to that firm.

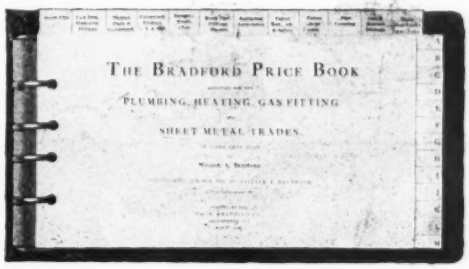
The J. J. Cottor Co., of Springfield, has been awarded the contract for installing a new heating plant in the police station at Chicopee.

About August 15th the United States Radiator Corporation will open a Western Massachusetts branch on Center Street, Springfield, Mass., of which W. C. Brandeau, formerly connected with the Boston office, will be manager.

New England Plumbing Inspectors' Annual Outing.

A terrific thunderstorm with such torrents of rain that it put the street car system out of commission and turned the streets into rivers, was the chief feature of the annual mid-summer outing of the New England Association of Plumbing Inspectors, held at Canobie Lake Park, just outside Lawrence, Mass., on July 15th. But it takes more than thunder and lightning to upset plans made by Inspectors "Andy" Burnett, of Melrose, and Oswald Cullington, of Lawrence, who were in charge of the arrangements.

Make Your Business Pay



Handling a large volume of business will not result in satisfactory profits unless each article handled nets its share.

THE BRADFORD PRICE BOOK

protects the Master Plumber and Steam Fitter against errors in estimating and billing. It sets out clearly in separate columns the Cost, Net and Re-Sale prices of the standard items used in the trade. Any office clerk can copy the figures, thus saving the time of a high priced man.

Pays For Itself Many Times

The price of the book is only $15. This includes Revision Service. New sheets are mailed, as price changes occur, free for one year. Renewal subscriptions, $12 a year.

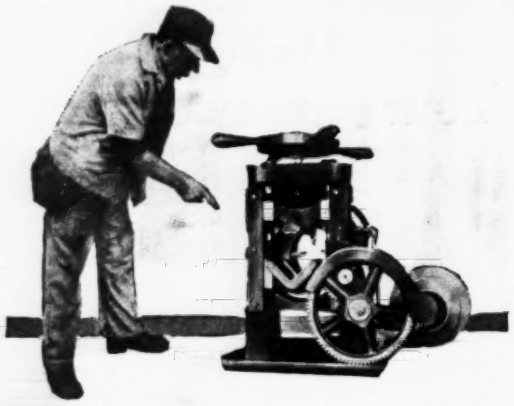
You Take No Chances

If you are not satisfied when you receive the book, return it within six days and your money will be refunded.

Write us on your letterhead for free sample sheets

Wm. A. Bradford

ROOM 2, BRADFORD BLDG.
11 Maple St., Quincy, Mass.



Here's the vise, boys, that holds the pipe still. It centers automatically

You just lay the pipe up against the dies and turn the wheel at the top of the machine. These screws on the side are made so that the top jaw lowers and the bottom jaw rises just enough to grip the pipe plumb in the center of the die-head. So, you see, the threading or cutting is bound to be perfect—it can't be anything else.

Then, holding the pipe still with the dies just riding around and the die head sliding back as the thread is cut, takes a heap of strain off the dies. In other machines where the pipe is turned, it's just about impossible to put a thread on anything but a straight piece of pipe, and a lot more power is needed. But with this Forbes' Pipe Threading and Cutting Machine you can thread and cut straight or bent pipe or assembled pieces.

There is a Forbes' to suit your pipe threading and cutting requirements. Made in sizes to handle pipe from one-quarter to 15 inches diameter, and for hand, belt or motor drive, with or without cast iron base. Write for the details, stating the approximate pipe sizes you handle, and the power available.

CURTIS & CURTIS CO.
318 Garden St., Bridgeport, Conn., U. S. A

2033-K

FORBES'
IT THREADS PIPE ACCURATELY

With the exception of the outdoor sports everything went off according to the schedule, and none of the inspectors showed any signs of wetness.

The company, about 35 strong, assembled at the city hall in Lawrence during the forenoon and held a brief business meeting. While the meeting was in progress the storm set in, but nothing daunted the committee sent for automobiles and after a luncheon provided by Inspector Cullington set out for the lake, splashing through the puddles and passing stalled trolley cars. The entire party arrived at the park without mishap, and soon all were gathered about the tables with a chicken dinner driving all thoughts of the unpleasant weather outside from their minds, except when an unusually sharp crash of thunder drowned their voices or the lightning flashed.

After the dinner, the committee provided a plentiful supply of good cigars, and the inspectors had what they described as a "grand good time" discussing business matters, listening to impromptu speeches and the music from the dance hall adjoining, where the crowds marooned in the park were making the best of the situation. Set speeches are always taboo at the summer outings of the inspectors, and there was not a dull moment during the day. It was still raining when the caravan set out for home, the automobiles taking the inspectors from distant points to the railroad stations, but everyone voted the affair a great success notwithstanding the dry law and the wet weather.

Florida

Jacksonville and Vicinity.

The total building permits issued during the last six months by the building department in Jacksonville amounted to $1,722,065. To get the plumbing material for these houses has meant much waiting, there have been instances where a plumber has been compelled to remove the tub from his own house to supply the need of a new house where he had to finish the installation at a certain time.

West Palm Beach will erect a professional building at a cost of $100,000.

The June record of the Orlanda building program mounted to $285,000, breaking all records for a single month.

One and a quarter million dollars expenditure for building in St. Petersburg in the last six months is the record for that city, with a ceaseless demand for additional homes and stores.

A $100,000 tourist hotel will soon be built on the shores of Scott Lake.

F. A. Hathway, Superintendent of Public Instruction in Duval County, is advertising for bids on the contraction of large school buildings in Grand Park and in Arlington.

Georgia

Atlanta.

The Gresham-Jackson Co., 26 Luckie Street, is installing the plumbing in a residence being erected for J. L. Edmonson at 573 Whitehall Street. The plumbing in the Chero Cola Co.'s bottling plant will also be installed by this firm.

The Capital Plumbing & Heating Co., 60 South Forsyth Street, has the contract to install the plumbing in the new Piggly-Wiggly store to be erected on East Georgia Avenue and South Pryor Street. This firm will also install the plumbing in five residences being erected on Blue Ridge Avenue for J. B. Daniel.

Ollie Wingate is installing the plumbing in a residence being erected for the Atlanta State Savings Co. at 233 Randolph Street. He is also remodeling the plumbing in the residence of Dr. Hurt on Elizabeth Street and in the residence of J. A. Bashlor at 355 East Hunter Street, and he is installing new fixtures in a residence at 42[illegible] South Pryor Street.

The Ford Plumbing & Heating Co., 13 South Broad Street, has secured the contract to install the plumbing in the store building that is being erected by the Edgan Dunlap Insurance Co., on Nassau Street, and in the residence of L. Cohenn at 307 Ponce de Leon Avenue.

The Richardson Plumbing Co., 58 South Forsyth Street, is installing the plumbing in the three cottages being built by Renfroe & Thompson on Page Avenue, and in two other residences that are now in the course of construction in Atlanta.

The Wynne Plumbing & Heating Co., 63 North Forsyth Street, has the contract to install plumbing in eight cottages being erected on Villard Street for E. G. Willinham.

Lynch & Johnson are installing plumbing systems in the residence of A. D. Srochi being erected at 66 Lawton Street, in a garage for George M. Hope, at 230 Ivy Street, and in a garage for J. S. Ware at 10-12 Capitol Avenue.

C. W. Baxter Plumbing & Heating Co., has the plumbing contract on the residences being erected on Fifth Street, and Gordon Street, and in the office building of the Georgia Railroad Yards.

Pennsylvania

Pittsburgh and Vicinity.

The George Soeffel Co. has been awarded the contract for plumbing the garage to be built for the White Auto Co. on Melwood Street. The contract amounts to $6,500.

Schaffer Heating Co. has the heating contract on the Edwards residence on Forbes Street.

The G. F. Higgins Co. has the heating contracts for the Oriental Restaurant, Sixth Street, and the Arlington School, Arlington Avenue, Pittsburgh.

B. A. Hungerford and W. J. Barrett, both of the Pittsburg Water Heater Co., Pittsburgh, Pa.—From "Domestic Engineering" Photo.

The McGinnis Co., of Pittsburgh, has been awarded the heating contract on the Crawford Grade School, Duquesne, Pa.

W. E. Rowbottom, Chateau Street, is repairing and remodeling his plumbing shop in Manchester, which was badly damaged by fire last month.

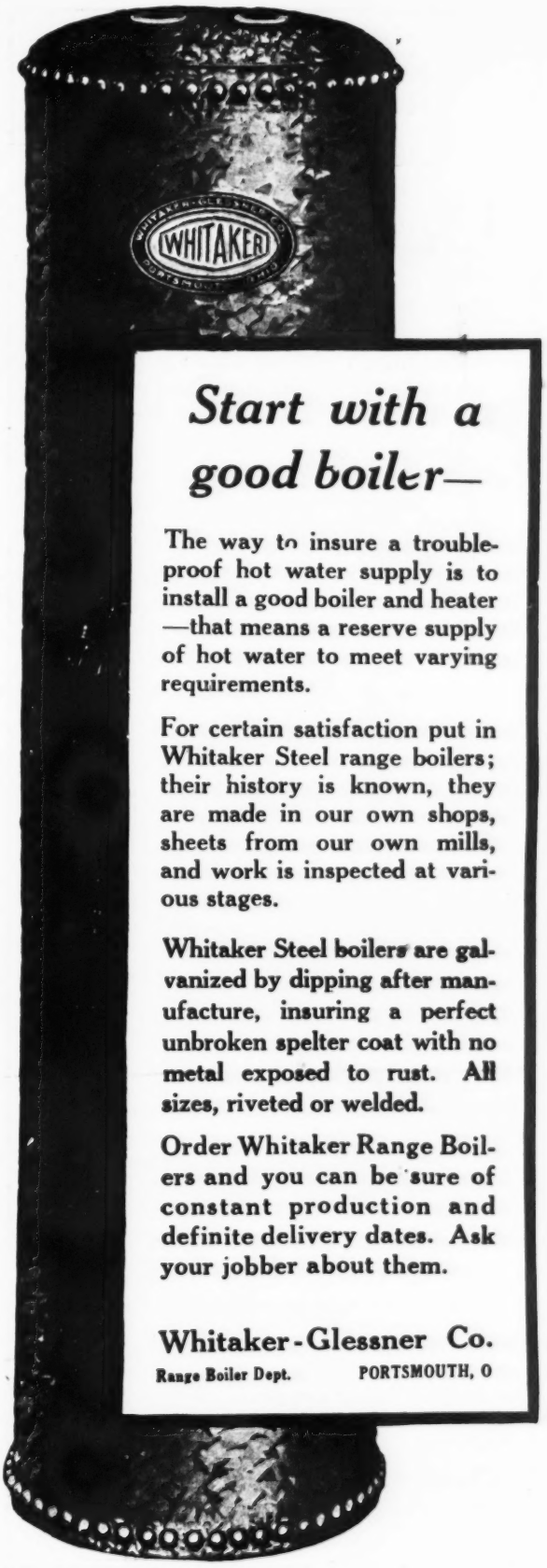
The Chase Plumbing Co. has secured a charter to carry on a plumbing business with a capital of $10,000. The members of the firm are: George A. Chase, A. E. Ciward and J. C. Godfrey, Jr.

R. Busse has secured the plumbing contract on the Pine Hollow School in Kennedy Township.

The McFadden-Craig Co. has secured a contract with the Bell Telephone Co. for remodeling the plumbing in the Court Telephone Exchange.

The Guarantee Plumbing Co. has the contracts to install plumbing in the Brighton Amusement Co.'s building on Butler Street, and in the Davidson residence being erected in East End.

Thomas Moyer, East Stroudsburg, who is as good a councilman as he is a plumber, is being kept busy with the installation of new bath rooms in the Pocono Mountain hotels for the summer rush which has already begun.



Start with a good boiler—

The way to insure a trouble-proof hot water supply is to install a good boiler and heater —that means a reserve supply of hot water to meet varying requirements.

For certain satisfaction put in Whitaker Steel range boilers; their history is known, they are made in our own shops, sheets from our own mills, and work is inspected at various stages.

Whitaker Steel boilers are galvanized by dipping after manufacture, insuring a perfect unbroken spelter coat with no metal exposed to rust. All sizes, riveted or welded.

Order Whitaker Range Boilers and you can be sure of constant production and definite delivery dates. Ask your jobber about them.

Whitaker-Glessner Co.
Range Boiler Dept. PORTSMOUTH, O

The Big Season for

Barber Patented Gas Burners

IS JUST AHEAD

The demand for Barber Patented Gas Burners has greatly increased each season. Wherever one is used, it invariably sells others.

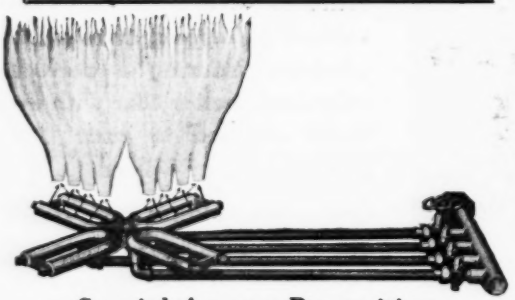
Barber Burners give perfect combustion, thus furnishing 25 to 40% more heat per cu. ft. of gas than ordinary types of burners. *Made for either Natural or Artificial gas.*

One ounce of gas pressure is all that is required for perfect operation—will burn on atmospheric pressure without "back firing."

Barber Burners are designed for all types of domestic heating appliances—furnaces, hot water and steam boilers; for industrial heating in vertical and horizontal boilers, and for other purposes such as enameling and baker's ovens, metal pots, special kettles, doughnut and candy stoves, coffee urns, coffee, peanut and popcorn roasters, etc.

Our Guarantee:

Barber Patented Gas Burners are guaranteed to furnish an average heat of 70 degrees F. in zero weather, upon gas pressure of one ounce and, further, to remain burning upon atmospheric pressure, if properly installed and instructions are carefully followed.



Special Agency Proposition

We are now appointing **special exclusive agencies,** which we support with extensive advertising, making our line a profitable department of our dealer's business. We are in position to make immediate deliveries. Write for exclusive agency in your territory, or for further details of the Barber Gas Burner line.

The
Cleveland Gas Burner & Appliance Co.
3704 Superior Avenue
Cleveland, Ohio

Cleveland and Vicinity.

Settlement of the strike of union journeymen plumbers, and resumption of normal building activities, is the subject uppermost in the minds of plumbing contractors, and heating and piping interests as well, because about 50 members of the steamfitter's organization have gone out in sympathy with the striking journeymen.

Some plumbing contractors, tired of the indifference of the building committee of the city council in failing to act upon the ordinance requiring licensing of journeymen plumbers, are preparing to go to work anyway, and will employ those operatives that are willing to come back to work.

Severe attack on the licensing law was made at the public hearing attended by contractors, journeymen, building interests and the public in general, by Theodore Poplowsky, head of the Poplowsky Plumbing Co., and author of the measure. Mr. Poplowsky denounced the law as reactionary, a factor tending to curb building industry, and a means of doing much harm to the community. The law has not been rescinded, though that was what was expected before council adjourned for the summer.

The plumbing interests here will continue to keep in touch with any similar situation in large cities of the country. A questionnaire received by the Associated Plumbing Contractors of Cleveland from 14 states shows that seven of these states either do not have such licensing law, or have it repealed. Only two of the remaining number have the law and enforce it. Others are seeking to do away with it.

The Plumbing Secretaries' National Conference.

With the appointment of E. F. Bohm, secretary of the local plumbing and heating organizations, as secretary of the Plumbing Secretaries' National Conference, which was permanently organized at the recent convention of the National Association of Master Plumbers, held in Pittsburgh, Cleveland may be said to be the headquarters of the conference. The object of the new organization is to cooperate with state and local plumbers' organization in the exchange of information that will be of benefit to the members. A credit bureau also is planned by the secretaries. Particular attention will be given to labor disputes, and all available on this subject will be transmitted to the different state and local plumbers' organizations through the Cleveland headquarters as clearing house. The headquarters will be at 608 The Arcade. Other officers of the conference are H. F. Baillet, Irvington, N. J., president, and W. W. Hughes, Minneapolis, Minn., vice president.

The members of the conference include:

H. F. Baillet, Newark Association, 48 Chapman Place, Irvington, N. J.

E. F. Bohm, Associated Plumbing Contractors, 608 The Arcade, Cleveland, Ohio.

A. A. Weingartner, Cincinnati Master Plumbers Association, 433 Walnut Street.

S. P. Grady, Nashville, Tenn., Association.

C. E. Cole, Birmingham (Ala.) Association and State Association

Fred Fleishauer, Buffalo (N. Y.) Association, Acting Secretary.

Walter Gruh, New Jersey State Association.

Geo. A. Diggins, Chester (Pa.) Association.

Fred N. Jones, Buffalo (N. Y.) Association, 799 Elmwood Avenue.

H. B. McClure, Harrisburg (Pa.) Pennsylvania State Association.

C. E. Baughton, Toledo (Ohio) Association, 3210 Cambridge Avenue.

G. A. Frankland, Toronto (Can.) Canadian Society of Domestic Sanitary and Heating Engineers, 22 College Street.

Eugene Duklauer, Chairman, Bronx Association, New York City, 211 E. 58th Street.

Arthur E. Fries, Reading (Pa.) Association.

J. W. Hull, Memphis (Tenn.) State Association.

H. A. Rieser, Northern Du Page County (Ill,) Association, Wheaton, Ill.

E. P. Donovan, Waterbury (Conn.) Association, also Connecticut State Association.

W. C. Haviland, Illinois State Association.

W. J. Blythe, Chicago Master Plumbers' Association.

E. J. Blake, St. Louis, Mo. Association.
W. W. Hughes, Minneapolis, (Minn.) Association, 1514 E. Franklin Street.
Jas. H. Trow, Salem (Mass.) Association.
Wm. Hughes, Secy. Detroit Association of Sanitary and Heating Contractors, 245 Merrick Avenue.
C. W. Wilson, 314 North Avenue, Youngstown, Ohio, represented by Wm. Rowland, Youngstown (Ohio) Association, 22 South Walnut Street.
Wm. Redieske, Secretary, Minnesota State Association, 511 Fourth Avenue, South, Minneapolis, Minn.
J. L. Hulteng, Grand Forks, N. D., State Association.
W. C. Green, Kansas City, Mo., Association.
Eb Ellen, Ohio State Association, 2057 E. 93rd St., Cleveland, O.
H. P. Bright, Akron (Ohio) Association, 409 Pearl St.
John C. Knoedler, Chattanooga (Tenn.) Association, 119 W. 7th Street.
Robert Pflug-Felder, Secretary Master Plumbers Association of Philadelphia, 8th and Norris Streets.
O. A. Peterson, New Britain (Conn.) Association.
John J. Shanahan, Norfolk, Va., Secretary, 804 Granby Street.
J. H. Keane, Pittsburgh, Pa., care Master Plumbers Association, Builders' Exchange.
R. A. C. Smith, Ensley, Ala.
Ed. P. Dunphy, Waterbury, Conn., Builders' Exchange, 18 Orange Street
Walter L. Bennett, Secretary, Master Plumbers Association, Portsmouth, Va.
Chas. E. Pelunek, Jr., Milwaukee, 451 Third Street.
J. L. Pace, Secretary Local Virginia Association, Roanoke, Va.
R. Turner, Wilkesbarre, Pa.

Housing Construction in Cleveland Held Back by Strike.

Though the building industry generally, and housing construction particularly have been held back by the plumbing strike, contractors are going ahead with their plans for future business, and a surprising number of contracts have been closed by leading firms in the last week or so. Conspicuous among these has been a total of about $80,000 work by the Maskell-George Co., including several high class residences on the Heights, and plumbing for the Willard Storage Battery Co. building, the new home of the Tomlinson Steam Specialty Company, and numerous smaller residences throughout the city.

Among the Plumbing and Heating Contractors in Cleveland.

The Smith & Oby Company has closed contracts for the heating equipment for the plants of the Oster Manufacturing Co. in this city, the McEkrath Tire and Rubber Co. at Ravenna, Ohio, plumbing and heating for additions to the plant of the National Acme Company, and plumbing and heating for improvements in connection with the National City Bank Building.

The Smith & Oby Company has moved into its new building at 6107 Carnegie Avenue, where two floors in the building will be occupied by the firm.

The Drummond-Miller Co. has received the contract for the heating plant being erected by the board of education on the East Side of the city. This job is expected to total about $100,000.

The joint picnic of the Heating and Piping Contractors Cleveland Association and the Ohio Chapter of the American Society of Heating and Ventilating Engineers, will be held at Chippewa Lake, about 40 miles south of Cleveland, Saturday, July 24. Members in Cleveland will show visitors the sights about Cleveland by journeying to the lake by automobile. Special cars on the interurban will be provided by the committee for those who do not motor. The committee in charge consists of Henry Henrishsen, Richard Morgan, M. Jones, Ed Maurer and A. W. Grove, for the contractors, and R. S. Mayer, R. H. Morgan, J. J. Kissick, C. F. Diether and R. L. Clark, for the Chapter.

Among new members to be added to the Associated Plumbing Contractors of Cleveland are Jacob Fox, Embe Plumbing Co., J. Yelsky and James Boliver.

Canton.

The East End Plumbing & Heating Co., Canton, has the contract to install the plumbing in 50 houses that are to be erected for the Zettler Building Co., in this city.

The Standard Plumbing & Heating Co., 122 Cherry Avenue, S. E., Canton, has the contract to install plumbing and heating in 300 homes that are being erected for the

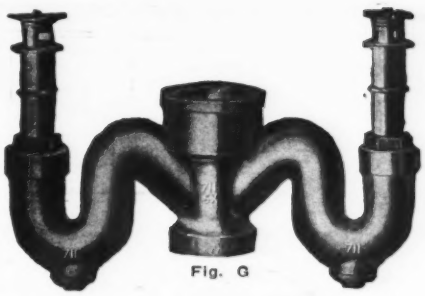


Fig. G

We are continually shouting about the BETTER TRAP—why wouldn't we?

It is the consensus of opinion that the "711" is the most common-sensed trap, that it is properly designed, that it has the real stuff in it and that it is the most fairly priced trap of its kind offered.

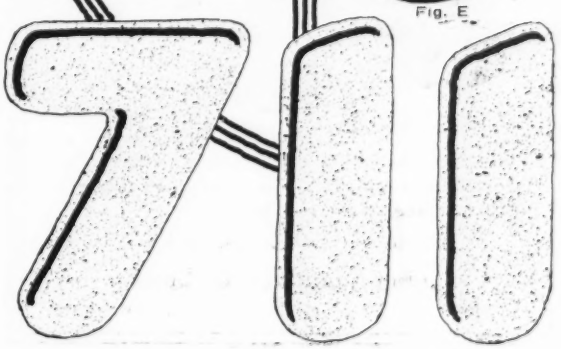
Won't these facts lead you to investigate?

ESSEX FOUNDRY
Newark N.J.

Fig. C

Fig. A

Fig. E



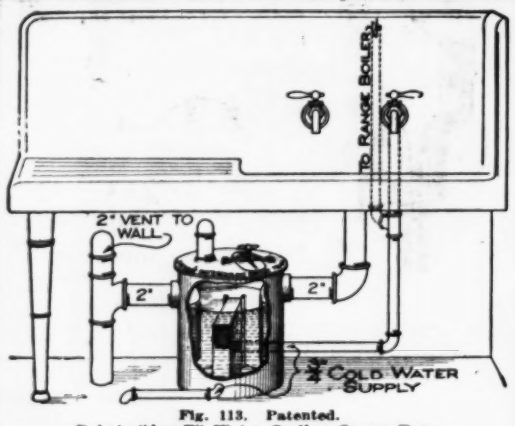


Fig. 113. Patented.
Dehn's "AcmE" Water Cooling Grease Trap.
A satisfactory installation.

1897 1920

"DEHNSANIGARD"

THE QUALITY GOODS

Compound Injector & Specialty Co.

Originators, Designers and Sole Manufacturers of

"DEHNSANIGARD"

419-421-D-N. Laramie Ave., Chicago, Ill., U.S.A.

A Recent Achievement

in closet construction is the new

Maddock Syphon Action Vitreous China Hopper Closet

Operates with very strong action.

Has unusually large opening throughout trap.

No. 391X. (Patented May 8, 1917.)

A special feature of this closet is the large surface of water and deep water seal. For about 12-inch roughing, with low tank.

Write for literature and prices.

John Maddock & Sons

Trenton New Jersey

Tinker Roller Beaming Co. This concern will also lay three miles of 12-inch water main, for this development.

H. E. Zimmer, formerly of Mueller & Zimmer, is now conducting a plumbing shop at 617 Bedford Avenue, S. W., Canton.

The Young Heating & Plumbing Co., 305 Cleveland Avenue, N. W., Canton, is installing the plumbing and heating in several residences, a garage, a school building, and an office building.

Akron.

Jordan & Franzen, 96 West Market Street, Akron, have secured the contracts to remodel the plumbing in the Sumner County Jail, a $2,500 job; the Akron Provision House, and are installing the plumbing in a store and apartment house in Goodrich Heights.

Comunale & Crichton is the name of a new plumbing firm at 197 East Exchange Street, Akron. Mr. Crichton was formerly plumbing inspector of Akron, while Mr. Comunale had previously conducted his own business. They have secured the contracts to remodel the plumbing systems in several houses in Akron, and have also secured several contracts for new work.

H. P. Bright, 409 Pearl Street, Akron, has the contract to install the plumbing in ten new residences to be erected in Akron for the Akron Insurance Co. Mr. Bright has recently completed the installation of plumbing and heating in four private homes.

The H. P. Cahill Plumbing Co., 14-16 South Canal Street, Akron, will install plumbing and heating systems in the new Firestone Steel Product Co.'s building and the Goodyear Rubber Co.'s new factory. Plumbing and heating systems will also be installed in five school buildings and in the Second National Bank by this concern.

New York

Plumbing and Heating Trades in New York See Business Improvement Ahead.

The local plumbing and heating industry, which, in common with the rest of the construction interests, is suffering greatly from the prevailing transportation difficulties and the coal shortage crisis, now sees signs for decided encouragement as a result of two important conferences just held here.

The coal shortage problem, which, in the opinion of Senator William M. Calder, chairman of the Senate Committee on Reconstruction is largely to blame for the holding up of housing construction, now stands a good chance of being solved owing to the decision which a committee of bituminous operators, headed by Col. D. B. Wentz, of Philadelphia, president of the National Coal Association of Washington, has come to, after a three-day conference with the Railroad Executives Committee.

A relief plan has been agreed upon which is expected to insure an adequate movement of coal at once to Lake Erie ports for trans-shipment to the Northwest and Canada, and also to relieve the coal shortage in New England and the rest of the country.

It is necessary for the Interstate Commerce Commission to approve the plan before it can be put into effect, and a committee appointed at the conference will submit the program immediately to that body.

Of equal, or even greater, importance to the construction industry and commerce in general is the program for speeding up the movement of freight 25 per cent, adopted this week at an all day meeting of the Association of Railway Executives, held in the Grand Central Terminal.

Resolutions were adopted urging all members of the association and all other common carriers to devote their utmost energy to the more intensive use of the existing equipment, and that they should undertake, with the co-operation of the public, to put the following program into operation:

1. An average daily minimum movement of freight cars of not less than 30 miles per car per day.
2. An average loading of 30 tons per car;
3. Reduction of bad order cars to a maximum of 4 per cent of total owned;
4. An early and substantial reduction of the number of locomotives now unfit for service; and
5. Should make more effective efforts to bring about the return of cars to the owner roads.

Eleven railroad companies are called upon to forward to the advisory committee reports that will enable a check to be kept currently of performance under this resolution. The advisory committee will arrange for comparative compilation and make distribution of individual companies. The reports made to the advisory committee will unquestionably be turned over to the car service commission.

About one hundred railroad executives were present, making it probably the second largest meeting ever held. For the first time the Dominion was represented, E. W. Beatty, the new president of the Canadian Pacific, attending.

After a thorough study of the express situation, the association decided to recommend to the railroads of the country that the express business should be continued to be handled as it was during the war under Federal control by one express company, the American Railway Express Co.

"It is the general belief of the members of the association that this will be in the public interest," said the statement on the subject. "As a practical question, there was really no other alternative, because of conditions brought about by the war. Inasmuch as certain questions of revenues of the railroads are involved in this contract, the general counsel of the association, Alfred P. Thom, was directed to submit to the Interstate Commerce Commission the form of contract for its approval. Upon such approval the association will recommend to the member roads a standard form of contract to be made between the individual companies and the express company."

The suggested minimum movement of 30 miles a day may not seem like speeding to most folks, inasmuch as it is equivalent to only about one and one-quarter miles an hour, but the trouble is it takes people so long to load and unload and switch, among other things, that not much time is left for freight rolling stock to revolve.

An official of the association said, following the meeting: "While the car performance proposed has never before been attained, it is believed that such a stunt is not impossible of attainment, if the whole-hearted assistance of everybody is secured."

In fact, 26 miles a day, the Marathon record of freight equipment in this country, was achieved between April and December, 1917, when the War Board was in control. In 1918 the showing dropped, ranging from 23 to 24 miles a day and is now put at 23.9 miles, while before the war it fell as low as between 21 and 23 miles a day. Therefore, it will be seen that the program contemplates a sprint of 25 per cent.

In adopting the program for speeding up the freight movement, the association in its resolutions said:

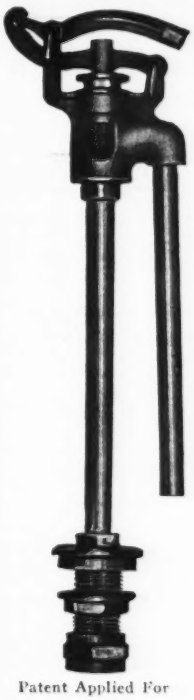
"It is apparent that under existing conditions transportation facilities, with particular reference to the cars and locomotives, are inadequate to handle the unusually large volume of business offered. It will be impossible to overcome immediately this deficiency by increasing the number of cars and locomotives, and it is clear that conditions require the most intensive use of the existing facilities. Upon release of the carriers from Federal control, not only were the cars and locomotives in the country as a whole inadequate and in an impaired condition, but the distribution of cars as to ownership was such as to prevent the greatest efficiency in their use, and that since the termination of Federal control constant interruptions due to disturbed labor conditions, which it is hoped will cease with the amount of the wage award, have seriously interfered with the movement of the traffic and relocation of cars."

Wide-Awake Plumbing Contractors in New York City.

That "the early bird catches the worm" is a fact not being overlooked by several alert, wide-awake New York plumbers, nowadays ,is proven by the experience of a man who recently bought a house in upper Manhattan Island.

Owing to the housing shortage there is at present a big demand for private dwellings which a few years ago were a drug on the market in New York. Old fashioned single-family houses, lacking modern heating and plumbing improvements, are being eagerly snapped up, and the purchasers are willing to pay unprecedented prices for them, and then spend considerable money in putting in improvements. Therefore there is a lot of work for plumbers and steamfitters in this direction.

The man above referred to was the purchaser of this kind of dwelling, and before the ink on the deed hardly had a chance to dry he was surprised to receive in the mail letters from six plumbers in the vicinity of the property, asking for a chance to submit bids for the plumbing and heating improvements.



Patent Applied For

"Burlington" Ball Cock

Closet tanks equipped with the "Burlington" Ball Cock cannot fail to give satisfactory service.

In construction, the "Burlington" is simplicity itself. Nothing to get out of order. Durable. Made of high grade metal by expert workmen.

Elevated or submerged pattern.

Write for descriptive matter of "Burlington" Ball Cocks, Flush Valves and Tank Levers.

Burlington Brass Works
BURLINGTON, WIS.

The Magic Fluid
that
Instantly Loosens the Rustiest Nut, Bolt, Union or Connection of any kind.

Tasgon will pay for itself a hundred times over because it

Saves Time
Saves Labor
Saves Parts
Prevents Shut-downs
in
Machine Shops, Garages, Factories, Railway Shops, Plumbing and Steamfitting Shops, Etc.

If you use a Wrench, use Tasgon.

If Your Dealer Cannot Supply You, Send Us $1.00 and We Will Forward Pint Nozzle Top Can Prepaid

Polygon Products Co.
141 Milk St., Boston, Mass.

Wolverine Waste and Overflow

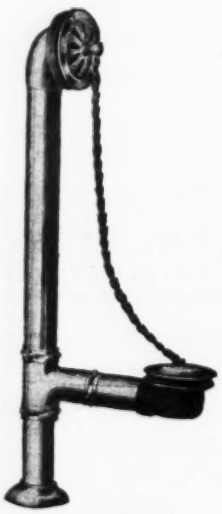
Cast Brass — Nickeled

SANITARY
SUPERIOR
SATISFACTORY

Long Sanitary Tee

with slip joint adjustment

ALL CAST PARTS



PERFECT ALIGNMENT

No. 398 W

Structurally identical with our renowned 398 Waste and Overflow Top ELL and TEE, however, are white plated, instead of polished nickel, as these parts are practically invisible when installed; the saving in price is making 398 W. increasingly popular.

Price on application, or refer to our June price list.

"Built to Maintain a Reputation"

Wolverine Brass Works

Manufacturers

Grand Rapids, Michigan

WOLVERINE CO., INC. New York, N. Y. WOLVERINE BRASS WORKS, INC. San Francisco, Calif.

As he had conducted the real estate deal with some secrecy, the buyer of the property wondered at first how these enterprising plumbers had learned of the transaction. Investigation brought to light the fact that they had been making a practice of watching the real estate columns of the newspapers, and carefully observing the notices of change of title to property.

As soon as they thus learn that the title to a private house has changed hands, these vigilant plumbers lose no time in getting in touch with the new owner, whose name is given in the notice, hoping to get his attention before he has a chance to make any plans for the improvement of his newly acquired property.

Considering the vast amount of this kind of work that is now to be had, and the keen competition for it in the industry, there may be a hint in this man's experience for other plumbers who have not yet caught on to the possibilities for new business offered by the real estate columns of the press.

Some plumbers, of course, are accomplishing the same result by making a working arrangement with local real estate agents, who keep them informed of all sales, and also put in a good word for them with the new owner.

It often happens that after a talk with a competent and persuasive plumber or heating man, the purchaser of the property is induced to make improvements that he had not contemplated before.

Most of the private houses on Manhattan Island, and in the suburbs, now on the market, for instance, have old stoves or worn-out hot-air heating plants, and only one bath room. While the new owner is considering putting the premises into liveable shape it is usually not a difficult matter to convince him that the installation of a hot-water or steam heating system would prove a real economy, and that an additional bath room or so would be a great convenience.

California

San Francisco and Vicinity.

The plumbing in the addition to the building near Montgomery and Post Streets, owned by the First National Bank of San Francisco, will be done by the C. Petersen Co., 730 Larkin Street. The total cost is $11,367.

The plumbing for the one-story and basement, Class C building, to be erected on the west side of Mason Street, between Turk and Eddy Streets, has been awarded to E. C. Curtis. The total amount of all the contract work is $47,000.

H. Ahnefeld, 554 Anderson Street, has the contract for plumbing and general repair work for the residence at 521 Waller Street.

Architect Norman R. Coulter, 46 Kearney Street, has awarded the heating contract to the Gilley-Schmidt Co. and the plumbing to Carl T. Doell, on the reinforced concrete building for the Salvation Army, to be erected at Lytton, Sonoma County. The contract price for the entire work is $72,000. The Schultz Construction Co. has the general contract.

Architect W. H. Crim, 425 Kearney Street, has awarded the contract for plumbing to Frederick W. Snook, and the heating to Carl T. Doell on the new residence for Frank H. Buck, in Piedmont Acres. The plumbing amounts to $3,655, and the heating to $1,753.

Shattuck & Sykes, Crocker Building, have been awarded the contract for constructing a concrete reservoir for the storage of 750,000,000 gallons of water by the Del Monte Properties Co. The contract was awarded on a percentage basis and is estimated to be for about $100,000. The reservoir will be erected on the Carmel River.

The Shingming Co., Ltd., a Chinese concern of architects, builders and contractors, of Tientsin, China, has established San Francisco offices at 112 Market Street, and is trying to get in touch with manufacturers in this country, who make equipment suitable for use in buildings in North China.

The Burnham Plumbing Co., Inc., 1220 Webster Street, has secured contracts to install the plumbing in the post-office building in Winnemucca, Nev., the Underwood Building, San Francisco, 35 buildings in Honolulu; the plumbing and heating in the Kern county high school and gymnasium in Bakersfield, the Casa Del Reg Hotel in Santa Cruz, and

the Shasta Hotel in San Francisco. The heating in the Standard Oil Co.'s building in Bakersfield and in the new theatre building in Bakersfield will also be installed by this firm.

C. Peterson Co., 730 Larkin Street, has secured the contracts to install the plumbing in the North Island Naval Air Station in San Diego, consideration, $162,000; plumbing and heating in the St. Francis Hospital, in San Francisco, $62,000; heating in the Metropolitan Life Insurance Co.'s building in San Francisco, $20,000, and the heating and ventilating in the Bank of Italy in San Francisco, $64,000.

E. C. Curtis, 403 Eighth Street, will install the plumbing in the Fillmore Street garage, two residences, and the Karmany property at Pebble Beach, Monterey. The plumbing in the Catholic Dominican school, to be erected in Vallejo, will also be installed by Mr. Curtis.

E. V. Lacey, 504 Leavenworth Street, has been awarded the contract to install the plumbing and heating in the Savory apartment building, the Clydesdale Motor Truck building and the Excelsior school.

S. W. Band, 580 Valencia Street, will install the plumbing in the new apartment building at Bush and Streklan Streets; in the store and loft building at Sutter and Gough Streets, Rev. Gamson's church and residence, Gary's Undertaking Parlors, and the Turlock school. The plumbing and heating in the California Baking Co.'s plants, the Berkshire apartments and the Fresno store and lodging house will also be installed by Mr. Band.

J. E. O'Mara, 443 Minna Street, has been awarded the heating contracts on the St. Joseph hospital, a $27,000 job; Livingston Bros.' building, and L. J. Clayburg's residence. Mr. O'Mara will also install the plumbing and heating in the Lassen Union high school in Susanville.

Thomas Brodil, 2119 Fillmore Street, has secured contracts to install plumbing in the Woods Building, the Bancroft Building, Calvary Church, G. A. Woodand residence, W. O. Miller residence, J. K. Wilson residence, J. Tharn residence, L. E. Bruce residence, the Greenoble apartments, Sol. Levin apartments, and in the J. B. Gelman property.

Slattery Bros., 730 Clement Street, have secured the contracts to install the plumbing in the Palicio cottages, three comfort stations, the Bowerman Drug Co. buildings, and the Newbegin Book Co.'s building, all of which are to be erected in San Francisco.

William P. Goss, 4640 Geary Street, will install the plumbing in the Meyer Bros. and the Weisbein garages, the Union Oil Co.'s service station, four residences for William Harder, the Haas four-apartment building, six residences for S. A. Barne, the Voorheis apartments, the residence for Thomas Mohler, and the heating systems in the new Jewish Temple.

Gilley-Schmid Co., 198 Otis Street, has been awarded the heating contract on the St. Agnes academy building in Stockton, the new Salvation Army home in Lytton, the Salvation Army headquarters in San Francisco, and in four apartment buildings that are to be erected in San Francisco.

A. J. Silva, 504 Gough Street, has secured the plumbing contracts on the Columbia Avenue garage, the California Packing Co.'s warehouse in San Lander, a school building in Revesta, 20 residences for L. A. Barn, and the heating in the Meyer property and apartments.

N. G. Weinholz, 3508 Mission Street, has been awarded the contracts for plumbing in the Oliver Plow Building, Dr. Schaller's residence, the Home for the Feeble Minded, the Laundry & Bakery Building in Eldredge, Reymond H. Bane's residence, four apartments on Eighteenth and Fulton Streets, and fifteen residences in Westwood Park.

Other Cities in the State.

The contract for the first unit of the new grammar school at Orland has been awarded to F. H. Nielson, on his bid of $42,102, exclusive of the heating plant, which will be installed before winter as a separate contract.

Thomas Kennedy, of Martinez, has been awarded a contract for the installation of a heating plant in the Antioch Grammar School, on his bid of $4,175.

Christensen & Anderson, 167 Hamilton Avenue, Palto Alto, have been awarded the contract for the heating and plumbing in the Sunnyvale Grammar School in Santa Clara County. Consideration, $8,700.

June was a banner month for building activities in Los Angeles, according to statistics, which show that the city building department issued 1,691 permits, with a total valuation of $6,610,681.

THOUSAND ISLAND HOUSE
and THE CROSSMAN HOUSE
ALEXANDRIA BAY, N. Y.
NOW OPEN

THE two leading hotels in the Thousand Islands are now under the same management. Over four hundred rooms, more than half with private baths. These two hotels are situated on the St. Lawrence in the heart of the Thousand Islands. Finest Fishing, Motor Boating, Trap Shooting and Bathing. Excellent Cuisine. Orchestra and Dance Hall in hotel. The finest auto road from all points. The ideal place for your vacation.

Write for handsome illustrated booklet.

WILLIAM H. WARBURTON, Proprietor

MARTIN-ize
your shop. Equip your pipe fitters with MARTIN PORTABLE VISE STANDS and PIPE BENDERS. They're time and labor savers. Made in two sizes.

SMALL STAND
Capacity, with chain vise, 2-inch pipe.
Capacity, with hinged vise, 2½-inch pipe.

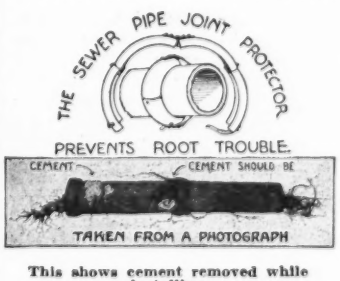
LARGE STAND
Capacity, with chain vise, 4-inch pipe.
Capacity, with hinged vise, 4½-inch pipe.

If your jobber can't supply you, write us direct. Descriptive literature, prices and testimonials sent on request.

H. P. Martin & Sons
626 E. 2nd St. Owensboro, Ky.

The Detroit Water Heater
Kerosene Burner
Will not carbon, clog or overflow. This is proven by actual use under all conditions.
DETROIT HEATER CORPORATION
715-717-719 Grand River Ave. Detroit, Mich.

The Stone Pipe Joint Protector



This shows cement removed while installing.

is made of 20 gauge galvanized sheet iron and laps over at the quarter connections.

It is flexible so as to allow edge of Protector to fit tight to any untrue pipe.

Also make special "Protector" for connections of 6-inch stone pipe to 4-inch iron pipe.

Write for booklet and prices.

FRED LANG
609 PLYMOUTH AVE. MINNEAPOLIS, MINN.

"Reading" Specialties

Hot Water - Steam Vapor and Vacuum Heating
Embody Advanced Ideas

The Reading Heater & Supply Co., Inc.
Reading, Pa.

Free for the Asking

This Catalog contains interesting details on

"Reading" Heating Specialties

Gives you the information you want regarding the "Reading" Tank-in-Basement System, modern installation methods, fuel saving, uniform heat, etc.

Send for your copy today.

The Reading Heater & Supply Co., Inc.,
Reading, Pa.

EXCELSO WATER HEATER

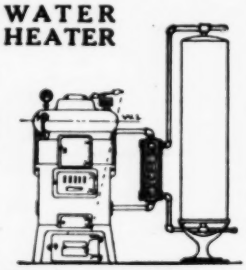
Heats domestic water just right at minimum cost.

A simple, one-piece casting connected below water line on outside of steam and vapor boilers. Does away with fire-pot coils.

Three sizes, for 40, 70 and 100 gals. capacities.

An easy seller and big profit maker.

Write for details.



Showing Heater Connected to a Vertical Type Boiler

EXCELSO SPECIALTY WORKS
601 WHITE BUILDING BUFFALO, NEW YORK

K. K. Cleans Closet Bowls
The Sanitary Way

A powdered chemical compound scientifically prepared for cleaning formation of uric acid and other stains from closet bowls and traps and urinals that are made from porcelain only.

No fumes, odor or dirt.

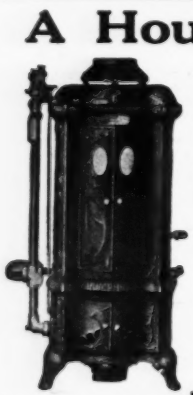
You can supply your trade with K. K. and make a good profit.

Order from your jobber

The Chamberlain Company
Pittsburgh, Pa.

Canadian Distributors:
110 Church St. Chamberlain Desolvo Co., Toronto, Ont.
No Branch Offices in the United States

A Household Word



The name "Humphrey" in connection with Automatic Gas Water Heaters is known the country over. The dealer and plumber who sell it get the advantage of this prestige which results in easy sales and satisfactory service.

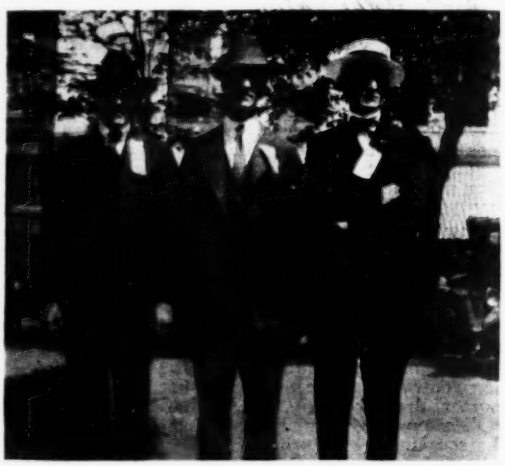
Try the Humphrey on your next water heater job.

Write for full description

HUMPHREY COMPANY
Div. Ruud Mfg. Co.
Kalamazoo, Michigan

North Carolina

Mitcham & Hewitt of Goldsboro, have recently secured the contracts to install the heating in the new $100,000 Baptist church in Clayton, the plumbing in the H. F. Pierce resident in Warsaw, and the heating systems in the Julius Cohen and Wilkins residences in Goldsboro.



S. F. Floyd, D. Jack Goodwin and J. O. Moore, all of Greenville, S. C., at the North Carolina Master Plumbers' Recent Convention at Raleigh, N. C.—From "Domestic Engineering" Photo.

Canada

PROVINCE OF ONTARIO.

Ottawa.

Not for many summers has the local plumbing and heating situation been as confused, uncertain and generally dull as at present. The local firms attribute this situation to several strikes in the building trades, all delaying operations, and to unsettled prices, to steadily mounting prices of supplies, to the exchange situation affecting materials from the United States and the general high cost of building, which has largely suspended construction, save on necessary public buildings, such as schools, hospitals, etc. The erection of new dwellings, contrary to the usual condition at this time of year, is practically at a standstill, and the plumbing and heating work entailed in the consequent remodeling of houses into apartments, etc., does not nearly make up the difference. Prospects are stated by practically all the trade to be none too promising, but it is hoped that with the approach of Fall and the return to the city of many families, who sought refuge from the housing scarcity in the country, building will be stimulated.

A contract for the plumbing and heating in six small dwellings now being erected by the Ottawa Housing Commission has been awarded to Williams Bros. at $3,000.

Practically no contracts have been awarded to local firms in the past few weeks, and only small repair and replacement jobs have enabled them to avoid laying off employees.

Late News from Vermont.

M. H. McLaughlin, of Rutland, has been awarded the contract for installing a new heating system on the Goddard Hotel at Ludlow, Vt. Mr. McLaughlin has just completed a heating plant in the new Fullerton Hotel in Chester which has more than 100 rooms.

Stickney & Furman will soon open a plumbing and heating establishment in the Adnabrown Hotel Building in Springfield in the store occupied for many years as a harness shop by J. C. Hooper. Mr. Hooper sold his business to Stickney & Furman.

COMPARATIVE EFFICIENCY OF VENTED HALF-S TRAPS AND NON-VENTED ANTI-SIPHON, NON-SIPHONING OR RE-SEALING TRAPS.

(Continued from Page 175.)

and consequent deposition of tightly packed solids does take place, was proven by the previously recited condition of the trap after tests at 30 City Hall Place.

9. During the same rest periods and with water containing the same percentage of grease, the thickness of grease congealed on the walls of the 1½-inch Geco trap will be theoretically twice as thick as that deposited on the walls of the 1½-inch P trap.
10. Since the velocity of flow through the P trap is about 8 times as great as it is through the enlarged body of the Geco trap, the grease will be torn away from the walls of the former by the water while it remains in the latter.

3. Tests of "Geco" Trap Made by the New York City Board of Standards and Appeals.—A. At 30 City Hall Place.

On August 13, 1918, the New York City Board of Standards and Appeals held a public hearing in its office in the Municipal Building, New York City, on certain proposed changes in the plumbing code, the most vital of which would permit the installation of unvented so-called anti-siphon traps, a substitute for the vented ½ S or S traps which had been in use in New York City for upward of 40 years and had been found entirely satisfactory and as nearly perfect as any apparatus can be.

It was thought at that time and it has apparently been confirmed since then, that the Board of Standards and Appeals had in mind the approval of just one particular patented anti-siphon trap, namely the "Geco" also known as the "Cody" trap. This is the only trap approved to date, a year and a half after the initial hearing, although there are many other anti-siphon traps on the market which will compare favorably both as to resistance to siphonage and back pressure, and as to self-cleaning, with the one approved.

It developed during the course of the hearing on August 13, 1918, that tests of the trap for siphonage resisting qualities had been made by the trap manufacturers in the presence of representatives of the Board of Standards and Appeals, but that no other interested parties, such as architects, engineers, builders, master or journeyman plumbers had witnessed these tests. A demand was made of the Board that a public test be held; at the suggestion of the chairman this was arranged and was conducted by the trap manufacturers, informally and in the absence of the Board, on the same date at 3 p. m., at 30 City Hall Place.

The general testing apparatus was erected on the rear fire escape and had no connection with the plumbing system; the water used in the tests was discharged on an adjoining roof.

The apparatus consisted of a vertical 1½-inch iron screw pipe about 50 ft. long, to the upper end of which was attached a barrel standing on the 6th floor fire escape landing. This barrel was provided with water from the city main. A quick-closing gate valve was installed on the 1½-inch pipe about 10 ft. below the bottom of the barrel, and about 2 ft. below the valve a 1½-inch Y branch and 45-degree elbow, to which the Cody trap was attached.

For purposes of testing, the barrel was filled, and water discharged therefrom into the 1½-inch stack by opening the 1½-inch quick-closing gate valve for three successive periods, said by the manufacturer's representative, who operated the valve, to be of 3 seconds' duration with 5 seconds' intervals. No attempt was made by the operator to

TURNER TRADE HOT BLAST MARK TORCH

No. 202
List $16

For Gasoline

has some new and interesting features.

Open type burner with which it is equipped, generates greater heat than the ordinary type. Superheats and properly mixes the air before it enters combustion chamber of burner, and is immune from wind and cold air currents.

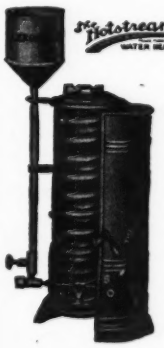
Ask your jobber for the Turner

The Turner Brass Works
Dept. D
Sycamore, Illinois

ALLRIGHT STEELBOUND

THE durability of a closet seat depends upon its construction. Careful buyers are willing to pay more for the ALLRIGHT Seat because it is well worth it. Write for the ALLRIGHT Catalog.

ALLRIGHT MFG. CO.
Rural Hall, North Carolina



KEROSENE WATER HEATER

WICKLESS BURNER generates its own gas and throws a clean, powerful flame.

Easy to operate and guaranteed for satisfactory service.

Once sold—stays sold—no comebacks.

THE HOTSTREAM HEATER CO.
CLEVELAND
"Makers of Heaters that Heat"

(We also make a complete line of single and double copper coil, and cast iron coil gas water heaters.)

One of the 105 Styles of American Cast N. P. Lavatory Traps

The artistic design and smooth finish of AMERICAN Traps will appeal instantly to your customers.

Fig. 301

Made perfectly smooth inside and out—deep water seal, full sized waterway.

You can depend upon the AMERICAN Line.

Write for catalog.

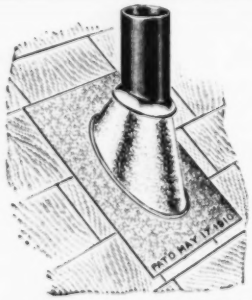
AMERICAN SANITARY MANUFACTURING CO.
Abingdon, Illinois
Manufacturers of Fine N. P. Brass Specialties

FROST QUALITY.
BRASS GOODS FOR PLUMBERS
A complete line covering every requirement
Original designs, finest finish, reliable and durable in service. Get our latest Catalog. It will assist you in ordering your brass supplies.
Frost Manufacturing Co. Kenosha, Wis.

"HAMPSHIRE" PATTERN
BIBBS, STOPS

BASIN and BATH COCKS
MANUFACTURED BY
THE HAYDENVILLE COMPANY
HAYDENVILLE, MASS.

WATROUS SANITARY PLUMBING FIXTURES
DUOJET
A line representing the most advanced ideas in Sanitation, Economy of Operation and Ease of Installations.
Duojet Closets—Flushing Valves—Urinals—Drinking Fountains—Self-Closing Cocks—Liquid Soap Fixtures, Etc.
Manufactured and Sold Exclusively by
The Imperial Brass Manufacturing Co
510 South Racine Avenue, Chicago, Ill.
ASK FOR CATALOG


Don't Be Content
With Ordinary Roof Flashings
Specify and Use the Reliable
"SIMPLEX"
Made in
All Lead—Copper—Galvanized Iron
Every Flashing Adjustable
Every Flashing Perfect
Manufactured only by
Simplex Mfg. Company
313 S. Clinton St. Chicago

time himself by even an ordinary watch, much less a stop watch. I am convinced that the periods of flushing did not exceed 3 seconds each.

The rate of flow through the 1½-inch pipe was not established, nor did the operator endeavor to determine it; but it is certain that the pipe remained completely filled with water during the tests above the trap Y branch, and that therefore no vacuum existed within the vertical pipe itself. The partial vacuum in the branch trap connection was merely induced by the column of water passing down the main line. No attempt was made by the operator to determine the degree of vacuum.

The test should have been made under conditions of flow resembling those occurring in actual plumbing installations, namely with a partially filled main. A vacuum would then have been created within the main, and the siphonic influence on the trap would have been greater in consequence.

The use of a 1½-inch vertical riser used as a waste pipe is against the rules of the plumbing code which prescribes not less than a 2-inch pipe, which must be open at its top, and not closed as was naturally the case.

The free discharge of the water from the open end at the foot of the 1½-inch stack does not in any way resemble actual conditions. The back pressure, which would have developed in the stack, had it been connected in the usual manner by a horizontal line to the house drain, was entirely absent and thereby created conditions of air pressure within the stack which differed essentially from those of actual plumbing installations. The absence of back pressure naturally failed to show the "blowing" of the trap which occurs in unvented plumbing stacks, connected by horizontal lines to the house drains.

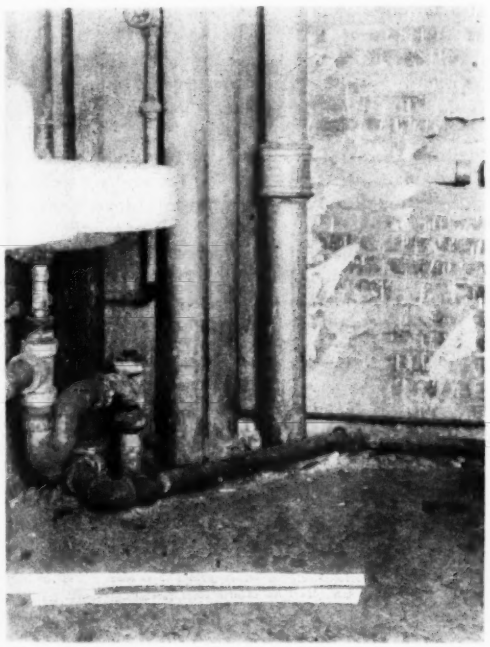
To the trained engineer the testing equipment and method of operation used by the manufacturers and apparently accepted by the New York City officials, seems naturally, in view of all these defects, most unscientific, inconclusive, and bordering on the ridiculous. It is inconceivable that the greatest city in the world should have attempted to determine the reliability of an apparatus which is intended to protect mankind against foul air produced from the decomposition of its own waste products, by means of a testing apparatus erected on a fire escape, entirely disconnected from the plumbing system, completely different from actual plumbing practice, not even complying with the plumbing code, and operated in a manner similar to that used by children in playing with toys.

B. In the Hallenbeck Building.

It is my understanding, although not based on personal knowledge, that the Master Plumbers' Association of Greater New York, because of the unreasonable attitude of the Board of Standards and Appeals, and because the Association considered the introduction of the amended plumbing code a serious public danger, requested His Honor, Mayor Hylan of New York City, to have reliable tests made of the Geco trap when attached to a properly designed plumbing system in an approved manner. The Mayor is reported to have requested that the representative of the Master Plumbers' Association, Hon. Wm. J. Flynn, confer with the chairman of the Board of Standards and Appeals, Hon. John P. Leo, and that these two agreed on such proper manner of testing the trap in an existing building. I am informed that thereupon Mr. Leo without giving due notice in sufficient time to the Master Plumbers' Association or its representative, proceeded to test the Geco trap in the existing Hallenbeck Bldg., located at the southeast corner of Pearl and Park Streets, New York City, on May 1, 1919, and that he thereupon reported to the Mayor that the tests had been made as suggested by him and had proven the trap satisfactory in every respect. It

is my understanding that Mayor Hylan then took no further active interest in the matter.

While, as you know, I did not witness the test made by the Board of Standards and Appeals in the absence of an invitation or even notice, this test is described to some extent in the June 4, 1919, issue of the "American Architect", reported to have been written by Edward F. Hammel, Engineering Editor, who was formerly the Engineer of the Board. Mr. Hammel told me personally that he acted as consulting engineer for the Board, in the preparation of the tests described by him.



Photo, No. 5.

On May 2, 1919, the day after the test, I visited the Hallenbeck building, saw what remained of the testing connections and appliances and inspected the plumbing system to which the traps under test had been connected. I thereupon had the plumbing system measured and complete plans made.

That the method of testing the Geco trap in the Hallenbeck building was fully as unscientific and inconclusive as the previous one on the fire escape, at 30 City Hall Place, will be readily understood.

The Geco trap to be tested for resistance to siphonage was connected to the 5-inch stack near its foot on the first floor, while fixtures were discharged into this stack on nearly every floor above. Under these conditions there is no vacuum at the trap connection, consequently no trap siphonage. There exists on the other hand positive pressure, consequently back-pressure and resultant blowing of the trap. Mr. Hammel says: "The anti-siphon trap lost no seal from siphonage." This statement is perfectly true; but Mr. Hammel, I am sure, did not expect that it would. Had he placed the trap connection at an upper floor the siphonage would have been most pronounced; this too, I am sure, Mr. Hammel as an engineer, must have known. Why he placed the trap in a position practically free from siphonic action to prove its capacity of resisting siphonage is not apparent; in fact it is equally as absurd as testing a metal sample for tensile strength by compression tests.

The attached photo No. 1 shows the 5×2-inch plugged

GAUGE GLASS

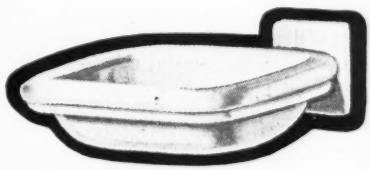
IMMEDIATE DELIVERY
STANDARD AND HIGH PRESSURE

Our High Pressure Glasses have fused ends and are annealed by special process. Try them for highest steam pressures.

We manufacture Automatic Air Valves and Hot Water Thermometers.

MAGEE STEAM SPECIALTY CORPORATION
136-138 Beekman St., NEW YORK CITY

SNO-WHITE



B-51 Soap Dish
4" x 6"

The cut shown here represents one of our beautiful special design bath room fittings — porcelain enamel on cast iron. An everlasting finish.

Write for catalog and discounts.

American Enameled Products Co.
2118-2128 Prairie Ave. Chicago

Where specifications call for a high grade shampoo fixture, you can safely install

The "S & K" Rainbow

C-955 is one of our latest models. Quick action. A time-saver for the operator. In ordering, specify distance from center of cock holes.

Manufactured by

Street & Kent Mfg. Co.
549 Fulton Street
Chicago Illinois

Eastern Representative:
J. W. Gannon, 30 Church St., New York City.

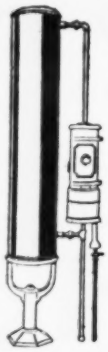
Pacific Coast Representative:
Wm. P. Horn Co., Rialto Bldg., San Francisco, Calif.

C-955
Basin Cocks
Quick
Compression

Clean Salesmanship

The Parrott Heater Company is selling Parrott Heaters on their merits. It does not require recourse to competitor-abuse—let competitors do that! "Every Knock Is a Boost!"—and we are enjoying considerable of it. The facts are: The New Parrott does anything that any heater will do, and does it with less gas than any other heater will do it. "The Story of the Parrott" tells why. Send for it.

Parrott Heater Company 224 21st Street DETROIT, MICH.



IDEAL BOILER SPUD

For Side Connections Gas Water Heaters to Boilers

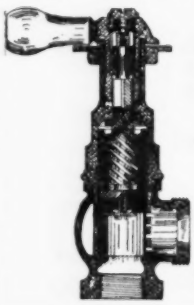
Takes less time. No need to disturb old pipes. Assures water tight connection. Standardizes pipe fitting. An ideal connection.

Write for details.

COLONIAL METAL PRODUCTS CO.

391 East 149th Street NEW YORK CITY

Opens Full On One Turn



A strictly graduating valve guaranteed to heat farthest and nearest radiators at the same time.

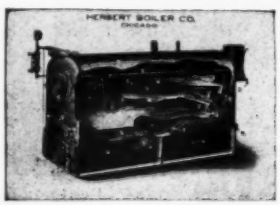
Non-rising stem. Air and steam tight graduated dial.

Write today for free catalog giving full description.

ECONOMY VAPOR HEATING COMPANY

Lyric Building Omaha, Neb.

HERBERT MAGAZINE WATER TUBE SMOKELESS BOILER



Has twice the fire travel of any boiler of its size.

Burns any kind of coal successfully; without smoke or gas.

Low water line. Wrought iron tubes double life of boiler tubes.

Easy set and moved in place—passes through small opening. Nothing like it built.

Write for particulars

HERBERT BOILER CO.

Root & La Salle Sts., Chicago

A Trap that makes good

Here is a cast iron bath trap that you can install and forget about.

The body is 2⅞ in. x 6 in. tapped 1½ in. Iron Pipe, with N. P. cover or Brass Plug.

MARVEL Traps are made in a wide range of styles and sizes for baths, sinks, showers, laundries, etc.

The MARVEL trade mark is stamped on each piece—look for it.

Write for catalog or ask your jobber.

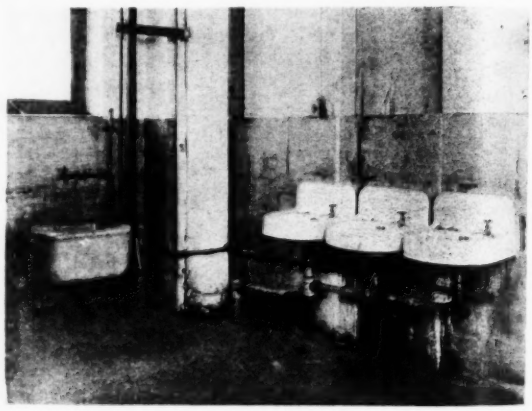
Detroit Marvel Brass Mfg. Co.

Manufacturers of the Famous Marvel Traps and Connections

Cor. Rivard and Sherman Detroit, Mich.

T-Y fitting for the Cody trap connection, and also the disconnected 4-inch vertical vent stack and 2-inch horizontal branch vent connection. The 4-inch stack to the left of the 5-inch soil stack is in actual practice intended to serve as a floor drain waste.

The attached photos, Nos. 2 and 3, show the method used on the 5th and 7th floors (from which the plumbing fixtures had been removed) to connect the discharge pipes of the 25-gallon tank to the lead bends by putty joints. That the Engineer of the Board should have installed and that those of its members, who witnessed the tests, should have permitted putty joints in a testing apparatus said to represent actual conditions of plumbing, and on the results of which they reported to Mayor Hylan, cannot help casting discredit on their work and their judgment. This is especially true, since these putty joints occurred in the outlet waste pipe from the Geco traps placed under the tanks on the 4th, 5th and 7th floors. Such putty joints are not air tight, even with the best of intentions, and the admission of only relatively small amounts of air into a waste pipe, whether through leaky joints or through vent pipes, prevents the complete siphonage of any traps. Hence the fact that these Geco traps, which were inserted in the tank waste lines on the 4th, 5th and 7th floors did not siphon, is no proof of their siphonage resisting qualities. Mr. Hammel,



Photo, No. 6.

to be sure, does not, as a matter of fact, report in his "American Architect" article, that these traps did or did not lose their water seal; but if they retained a part of it it was due to refill from the tanks to which they were connected, to leaky putty joints, and in addition thereto to a further and still more serious condition which must have been overlooked by Mr. Hammel and the Board members; otherwise they might be justly accused of incompetency. This condition was found in the fact that several basin traps connected to the 5-inch soil pipe were unvented ½ S traps, which at once, upon the creation of a slight vacuum in the stack, would have their seals broken and thereafter act as a vent pipe, admitting sufficient air to destroy any vacuum immediately. That this condition existed, is shown in photos No. 4, 5, 6 and 7. No. 4 shows the 4-inch floor drain, 5-inch soil, and 4-inch vent stacks on the 8th floor, and to their left a battery of 5 basins with an unvented ½ S trap. No. 5 shows a close view of this same trap with its vent connection plugged. No. 6 shows a battery of 3 basins, also with an unvented ½ S trap on the 9th floor. No. 7 shows in the upper left hand corner the continuation at the 9th floor ceiling of the unvented waste connection of the 5-basin battery on the 8th floor, this 2-inch waste discharging into a 4-inch T-Y. Photo

No. 7 also shows near the upper right corner the continuation of the unvented 2-inch waste line from another battery of basins on the 8th floor. The bracket seen in the center of the photograph was used to support one of the 25-gallon tanks. Although these photographs were made on the day following the tests of the Board of Standards and Appeals, it will be noted that the tanks and other appurtenances of the testing apparatus had already been removed.

The tests made by the Board of Standards and Appeals

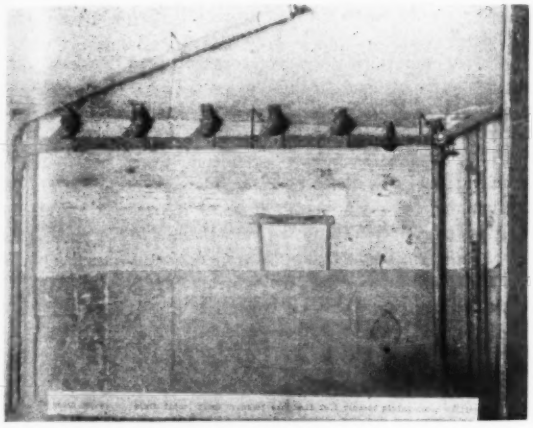


Photo. No. 7.

at the Hallenbeck building therefore not only lacked that careful workmanship and design of testing apparatus which is essential for all important tests, but they exhibited a complete lack of appreciation on the part of those responsible for them, of the fundamental essentials necessary for such tests, in the following particulars:

1. No vacuum, but rather a positive pressure, existed in the 5-inch stack on the 1st floor, where the Geco trap was connected for siphonage test.

2. The Geco traps tested for siphonage on the 4th, 5th and 7th floors, were inserted in waste pipe lines having putty joints on the sewer side of the traps. The admission of air through such joints and the resulting breakage or prevention of a vacuum are quite probable.

3. The vacuum in the entire system was largely diminished or perhaps entirely prevented by the admission of air through the unvented ½ S basin traps on the 8th and 9th floors.

4. Any slight loss of seal which might have been caused in the Geco traps on the 4th, 5th and 7th floors, was restored by refill at the cessation of the discharge from the tanks.

Mr. Hammel reports that the water seal of a vented ½ S trap, connected on the first floor in place of the unvented Geco trap and vented into the 4-inch vent stack fluctuated considerably at each discharge, due to siphonic action, but that the seal remained unbroken. No record is given by him nor was there apparent any trace of the existence of any vent connection to the 4-inch stack on the day following the tests, as is shown in photograph No. 1, although the Geco trap tests were made in the morning, the vented ½ S trap tests in the afternoon, and my inspection on the following morning.

(To be Continued.)

The plumbing and heating contracts on the new $325,000 lamp bulb factory, to be erected at Fort Wayne for the General Electric Co., have been awarded to Hattersley & Sons, East Main Street, Fort Wayne, Ind.

"Mor-Seal"

"THE CLEANER CLOSET"
Patent Pending

Made of "Castex" Whitest Vitrified China. A closet of the washdown type but infinitely better.

See your nearest jobber

CHICAGO POTTERY CO.
1924-40 Clybourn Ave., Chicago

SAVE MONEY for Your Clients
and Make Life-Time Friends of Them

It is not hard to interest anybody in a good dividend-paying proposition like the Elliott Combination Water Heater and Gas Stove Top.

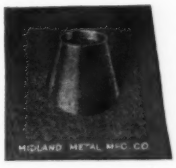
Heats water with gas while cooking that would otherwise be wasted. Adapted to any gas range and can be used with oil stoves.

Be the first man in your town to handle the ELLIOTT.

State Rights Offered to Reliable Men. Write Now

Elliott Water Heater Co., Inc.
9 Willoughby St., Brooklyn, N. Y.

"Midland" ALL LEAD ONE PIECE PATENTED Roof Flashing



Will Last as Long as the Building

No soldered joint—no leaks.

Made in all sizes—1 to 6 inches.

Base is heavier than 4-lb. sheet lead. Large enough to permit two rows of shingles to cover upper part.

Angle flashings fit any pitch roof.

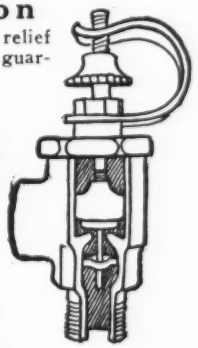
More convenient to stock and pack than others—easier to sell and install. Let us tell you why.

MIDLAND METAL MFG. CO.
1219 Lydia Avenue Kansas City, Mo.

Positive Action

is an important feature in a relief valve. This point is positively guaranteed in the

DONNELLY
Hot Water Relief Valve



Spring is located on outside where it will not corrode from dirt, sediment and water. Also prevents spindle inside from sticking.
Tested to 150 lbs. water pressure.
Made of steam bronze mixture.
Make your hot water installation safe—Install the Donnelly Valve.

Write for Literature

DONNELLY MFG. CO.
29 Mills Street, Malden, Mass.

We also make the Donnelly Automatic Vacuum Valve

THE UNIVERSAL FLUSH VALVE

Most adaptable valve made. Only one style, which can be adjusted to eight different positions. Fits any bowl.

Easily installed.

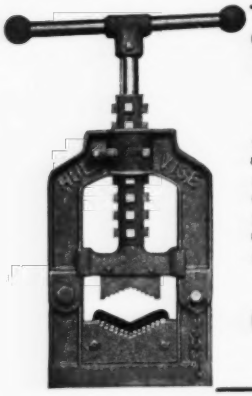
Made with oscillating lever or push button.

Details and prices on request.

MILWAUKEE FLUSH VALVE CO.

Valve Specialists

Milwaukee, Wis.



The HULL Quick Acting PIPE VISE

75% quicker in adjustment than any other pipe vise on earth.

It is all in the sleeve and lock ring.

Positive action. Made for hard service. Protected by patent.

Sizes from ⅛ in. to 8 in.

Ask your jobber, or write

Columbus Machine Works

Columbus, Indiana

A Profitable Addition to Your Regular Line

The Ralston New Process Water Still purifies any kind of water by distillation, for laboratory or drinking purposes. Can be heated over gas burner or stove.

Made of copper, coated with pure block tin.

There is a big demand for this device in schools, offices, hotels, factories, homes, etc. You make a good profit on every sale.

Write for Booklet.

John Trageser Steam Copper Works

447-457 W. 26th St., New York City

COST PLUS TEN VS. COST MINUS FIFTEEN.

(Continued from Page 179.)

ciety realizes that it must protect itself against the old fogy among business men, as much as against the fogy nations. Of the two, the fogy business man—the one who insists on following the old rules of a knife up every man's sleeve—is by far the greater danger till he is tagged."

"Theories—foolish theories!" and Brockson started for the door, "you have not spoken one word of practical stuff! None but fools would listen to such silliness! Show me something tangible—"

"It is of the spirit to a great extent yet, Brockson. And only the finely attuned spiritually see the new spirit. That mill corporation out in York State—let me again show you the Van Dyke print—caught it; hundreds of other corporations this wide country over have caught it; every observant master plumber, every keen-eyed supplyman and manufacturer have caught it—that is the promise of it. It is a young Service as yet; it isn't fully grown yet—though it is a most comely youth!—give it years, give it proper nourishment, give it a hospitable reception—and what won't we have! Why, the League of Business Service will have the League of Nations all beaten to a frazzle, for in the long run it will spread from nation to nation with a greater speed than ever did Bolshevism. The Spirit of the New Day."

As Brockson crossed the threshold, I couldn't help but call after him: "The spirit of dead men made perfect."

* * *

Oh, yes! I believe every word of what I have written above about the new spirit that is today hovering over the world of business; I have seen it again and again. Its visits are getting ever more frequent—the Spirit of Service. Yes, the Spirit of Live and Let Live. Help it along, brother. It is the salvation of our economic life; it is the antidote for Bolshevism. It is the only practical thing in these times.

For it is the spirit of dead men made perfect. The spirit of the millions who have died that we might live. Help it along!

NEW MEMBERS IN "LIVE WIRE" CLUB.

The National Trade Extension Bureau, Evansville, Indiana, announces that the following plumbing and heating contractors have joined the Bureau's "Live Wire" Club, since June 1st and up to July 1st:

California.—Roy Sunderland, Turlock.

Florida.—F. C. Des Rochers, Ft. Myers.

Indiana.—Chas. Lee & Son, Kendallville.

Minnesota.—Hughes Heating & Plumbing Co., Minneapolis.

Missouri.—Leo N. Rupp, Hannibal.

Montana.—Benson & MacCauley, Box 196, Chinook.

New Hampshire.—Geo. F. Hickey, 77 Bridge St., Manchester.

New York.—Joseph E. Nicklas, 104 Quail St., Albany; Wm. B. Lippoth, 8 Union Ave., New Rochelle.

Rhode Island.—John B. Nahan, 71 Warner St., Newport; John B. Waters, 102 Spring St., Newport.

South Carolina.—W. J. Benson, P. O. Box 392, Conway.

Texas.—E. J. Archer, 2510 Washington Ave., Houston.

Washington.—Dupar-Blythe Co., 1313 Railroad Ave., Bellingham; King Plumbing & Heating Co., 214 Columbia Street, Seattle.

P. B. Arnold & Co., of 213 Main Street, Fort Wayne, have been awarded the contract for making extensive alterations in the plumbing at the county "poor farm", Columbia City, Ind.

HEATING AND VENTILATING A COTTAGE HOSPITAL.

(Continued from Page 169.)

The inlet registers leading from the indirect stacks are computed as follows:

Total air supply, 1,600 cu. ft. per minute, which, with a velocity of 200 fet per minute, will call for a free area of $1{,}600 \div 200 = 8$ sq. ft. total or $8 \div 3 = 2.7$ each. $2.7 \times 144 = 388$ sq. in., which increased about 30 per cent for an open pattern register, calls for a dimension equivalent to 16x30 in., the size used.

The amount of surface in the vent flue coils is estimated instead of being computed, it having been found by experience that two lines of 1-inch pipe, the full height of the flue, will produce sufficient draft under ordinary conditions.

When it is desired to determine the size of aspirating coil or flue heater for a given set of conditions, the following formula may be used:

$$(1.)\quad D = \frac{V^2 (460 + T)}{16\ h}$$

In which—

D = difference in temperature, in degrees, between the air in the flue and that out of doors.

V = velocity of air flow through the flue in feet per *second*.

T = out-of-door temperature, commonly taken as 60 deg. for ordinary work.

h = height of flue in ft.

Knowing the volume of air to be passed through the flue per minute, and the temperature to which it must be raised, the heating surface in the aspirating coil may be found from the equation

$$(2.)\quad S = \frac{C \times t}{380}, \text{ in which}$$

S = square feet of heating surface in coil.

C = cubic feet of air passing through the flue per *minute*.

t = difference in temperature between the air in the flue and that entering from the room to be ventilated.

Example:—It is desired to discharge 900 cu. ft. of air per minute from a room through a flue 18 x 24 in. in size, and 30 ft. high, when the outside temperature is 60 degrees, and the room temperature 70 degrees. How many square feet of surface will be required in the aspirating coil?

Here we have a flue area of $1.5 \times 2 = 3$ sq. ft., and to discharge 900 cu. ft. of air per minute will require a velocity of $900 \div 3 = 300$ or $300 \div 60 = 5$ ft. per second. Hence, from the conditions of the problem we have:

$V = 5$, or $V^2 = 25$; $T = 60$; $h = 30$.

Substituting these values in formula (1) gives

$$D = \frac{25\ (460 + 60)}{16 \times 30} = 27$$

which makes the flue temperature $60 + 27 = 87$ degrees, or $87 - 70 = 17$ degrees above the temperature of the room.

For the second formula, we have

$C = 900$; $t = 17$, from which $S = \frac{900 \times 17}{380} = 40$ sq. ft.

Late News from Connecticut.

The Collins-Lotz Co., of 756 Main Street, Hartford, has been awarded the contract to cover the heating system in a new office building on Asylum Street for the Hartford Fire Insurance Co., the contract being placed with the Cleghorn Company of Boston. A contract for covering the plumbing system in a new hotel building at Bristol for the New Departure Manufacturing Co., also has recently been placed with the Collins-Lotz Co.

The town of Wallingford is considering the installation of a new heating plant in the Lyman Hall High School Building at an estimated cost of $1,000.

Kelly Controller

For all types of heating boilers

Eliminates Cracking of Sections and Explosions

A steam separator, emergency temperature reducer, safety device, and automatic feed-water regulator, combined in one simple device.

Manufactured by KELLY CONTROLLER CO., *Chicago, Ill.*

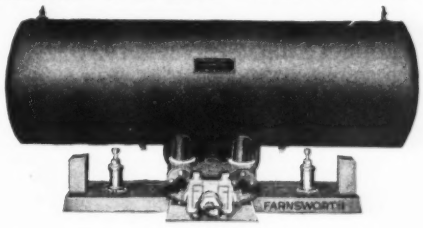
Write for complete description to

THE FAIRBANKS COMPANY, Exclusive Sales Agents

General Administrative Offices: New York

Branches in 23 Principal Cities

This Farnsworth Duplex Boiler Feeder Saves Coal



"The greatest coal saver ever offered the steam plant."

FARNSWORTH CO. Conshohocken, Pa.

Engineers and Manufacturers of Condensation Pumps

"BRE HYGIENIC" SEAT

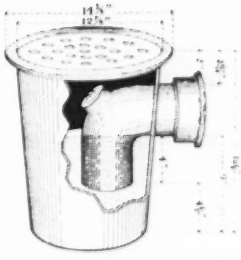
PATENTED DECEMBER 7, 1915

No. 213

Write for descriptive circular telling why this steel reinforced "BRE HYGIENIC" seat, open front and back is guaranteed not to come apart.

BRE Mfg. Co., Hyde Park Dist., Boston, Mass.

Excello No. 5 Mud and Sand Trap



A dandy Trap for the least money. Extra Heavy, for 4 in. extra heavy soil pipe. Cast in one piece. Loose strainer. Size 12 inches in diameter and 16¼ inches deep. Ample space for mud and sand, and a 6-inch water seal. Also provided with a Brass Cleanout Plug. Recommended for garages, carriage houses, bath houses, stables and dairies.

If desired we can furnish this without cleanout.

Weight about 100 lbs.

Write us for other products.

Our No. 5

The Cooper Foundry Co., Atchison, Kans.

Here's Your New Catalog, Mr. Plumber

Send for It Quick!

We have never issued anything nearly as valuable to you as this NEW CATALOG OF PAUL SYSTEMS OF WATER SUPPLY.

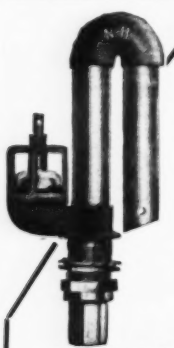
And it's for YOU. All you have to do is to ask for it and we'll be more than glad to send it to you post-haste. Full of illustrations and selling information, covering everything you want to know about these popular water systems.

Ft. Wayne Engineering & Mfg. Co.
1718 N. Harrison St.
FORT WAYNE, INDIANA

SANIBRASS

SHOWERS
For All Installations

SANIBRASS CORPORATION
BROOKLYN, N. Y.



N. H. Tank Valve

Your customer doesn't care what kind of a valve you install in his closet tank just so it works right. You can bank on the N. H. Valve every time.

Full size. Guaranteed to give satisfaction.

Write for Literature

EXETER BRASS WORKS
Exeter, N. H.

New York Office: 50 Cliff St., Henry Stein, Rep.

Tank Fittings of Quality

1856 **"McSHANE"** 1920

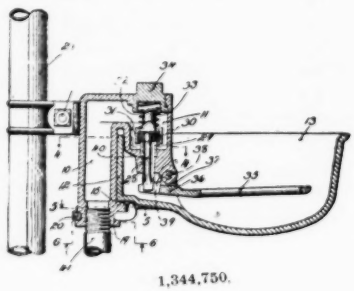
The ORIGINAL Compound Lever Ball Cock, Elevated, Low-Down, Top and Bottom Supply Tank Levers and Valves.

McSHANE BELL FOUNDRY CO.
BALTIMORE, MARYLAND

Patents

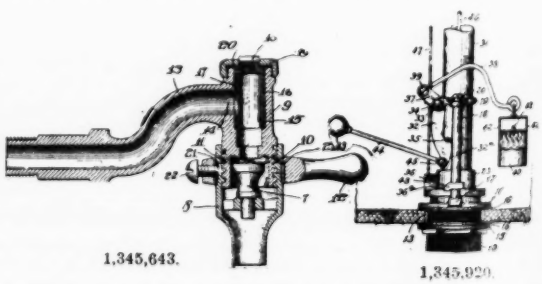
Plumbing Department.

1,344,750. Drinking Cup for Stock. Bernard A. Belling, Beaver Dam, Wis., assignor of one-half to Clarence S. Knaup, Beaver Dam, Wis. A device of the class described comprising a body member adapted for securement to a support and having a portion depending from its upper end and spaced therefrom, a drinking cup having its upper edge disposed between said body member and depending portion, cooperating supporting means on the cup and body member, said cooperating supporting means being disengageable by tilting said cup, whereby to disconnect the latter from the body member, and means shiftable into engagement with the under side of said cup adjacent the body member to prevent such tilting movement.



1,344,750.

1,345,643. Faucet Control. Joseph W. Sharp, Jr., Berwyn, Pa., assignor to Haines, Jones & Cadbury Co., Inc., a corporation of Pennsylvania. In a faucet, the combination of a tubular neck portion and a vertically extending cylindrical portion or housing integral therewith, said housing portion having an enlarged bore in its upper extension and a valve seat near its lower end, a cylindrical valve member seated in said enlarged bore, open at the bottom and closed at the top and provided with a port adapted to register with the bore of the neck portion, a nozzle member threaded on the lower end of the housing and provided with peripheral projections, a valve member mounted within the nozzle member, and a nozzle-actuating member having a portion surrounding the nozzle member and provided with an inwardly extending peripheral flange for engaging said projections, said actuating member also provided with means for engaging the nozzle member between adjacent projections.

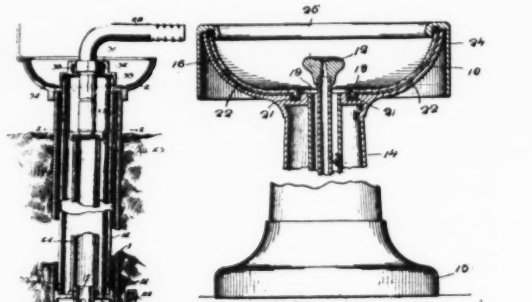


1,345,643.

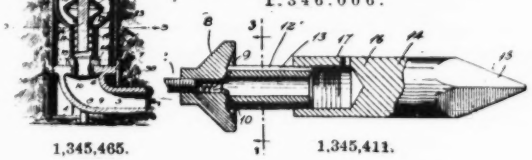
1,345,920.

1,345,920. Flush Valve. Edward Glennon, Brooklyn, N. Y. The combination of a tank for containing a supply of water and having an outlet, upright guide rods contiguous to said outlet, a cross-bar extending between said rods at their upper ends, a valve controlling said outlet, means for raising said valve to an open position, lugs on said valve

co-operating with said guide rods to guide said valve in its movements, a projection on one of said lugs, a locking member pivotally connected with said cross-bar and arranged to engage said projection to lock said valve in its open position and a hollow receptacle containing water and directly connected with said locking member, said receptacle normally dominating said locking member whereby the latter is moved to an inoperative position to release said projection and said receptacle being submerged in said supply of water and being rendered inactive thereby against said locking member whereby the latter swings back to an operative position in the path of said projection.



1.346.006.



1,345,465. 1,345,411.

1,345,465. Hydrant. William S. Snyder, Nashville, Tenn. A hydrant comprising a union for connection with the main, said union having at its upper end a tranverse partition provided with a central opening, a tubular valve slidable in the opening and having lateral ports, a spring normally pressing the valve upward to bring the port above the partition and to prevent the flow of water into and through the valve, and the lower end of the valve being closed, an extension connected with the upper end of the valve and having a beveled seat at its upper end, a hose connection having its end beveled to engage the seat, and a casing inclosing the valve, the spring, and the extension and having an opening for receiving the connection, said connection and extension having interengaging means for holding the valve open.

1,346,006. Drinking Fountain. Stanley Rice Curtis, Royal Oak, Mich. In a device of the class described, a standard, a bowl mounted theron, said bowl having a lower central outlet opening and an annular channel surrounding the opening, an inner bowl of transparent material within the bowl first named and having a central opening and an annular flange projecting from the edges of the walls of the opening into the aforesaid channel, packing material between the flange and the walls of the channel, and a display sheet between the walls of the bowls and protected by the joint effected between the flange and the channel.

1,345,411. Self-heated Soldering Iron. Hyman Silver, New York, N. Y. A self-heating soldering iron including a head having a longitudinally extending bore in one end forming a combustion chamber, a burner tube having one end inserted into the bore for a predetermined distance, said burner tube having an annular series of spaced longitudinal flutes in its periphery to permit the escape of consumed gases from the combustion chamber, each flute having a relatively small opening in its bottom wall adjacent the shield through which an auxiliary supply of air is introduced into the fuel just prior to its combustion, a shield formed at the opposite end of the burner tube, a fuel inlet pipe con-

STERLING SYSTEMS

Vacuum and Vapor Heating Specialties

Thermostatic Traps—Air Line Valves—Graduated Supply Valves—Air Eliminators—Damper Regulators

STERLING ENGINEERING COMPANY

Milwaukee Wisconsin

SHUR-TITE STOPS 'EM

"Standard" Plumbing Fixtures

Permanent exhibits in the following cities:

NEW YORK	EAST ST. LOUIS	WHEELING	NASHVILLE	KANSAS CITY
BOSTON	CLEVELAND	HUNTINGTON	NEW ORLEANS	SAN FRANCISCO
PHILADELPHIA	CINCINNATI	ERIE	HOUSTON	LOS ANGELES
WASHINGTON	TOLEDO	ALTOONA	DALLAS	DETROIT
PITTSBURGH	COLUMBUS	MILWAUKEE	SAN ANTONIO	TORONTO, CAN.
CHICAGO	CANTON	LOUISVILLE	FORT WORTH	HAMILTON, CAN.
ST. LOUIS		YOUNGSTOWN		

Standard Sanitary Mfg. Co., Pittsburgh

KINSEY & MAHLER CO.

Manufacturers and Jobbers of

Iron Pipe and Fittings, Plumbers' Materials, Steam and Gas Fitters' Supplies, etc.

COPPER AND BRASS WORK

PEORIA -:- -:- -:- -:- -:- ILLINOIS

CUT DOWN LABOR COSTS

and do a better job of pipe cutting with the

B&B THIN BLADE PIPE CUTTER WHEEL

Cuts through pipe with little resistance and fewer turns of cutter than other makes.

Does not spread metal apart — makes a clear, clean cut, reducing burr to the minimum.

Made of best tool steel, scientifically tempered.

Get a B & B Cutter Wheel from your jobber. Make any test you wish. Ask about our positive guarantee.

B & B TOOL & MACHINE WORKS

519 W. VAN BUREN ST. CHICAGO

Cutter Wheel Specialists

Brass and Copper Tubing

Seamless Drawn

Iron Pipe Sizes—Special Mixture if Desired

Crescent Brand Tubing is used exclusively in Wheeler Condensers. It is of special value to the plumbing trade. When QUALITY tubing is wanted always specify CRESCENT Brand.

[illegible] eler Condenser & Engineering Co., Carteret, N. J. 47

No More Sizzling Air Valves

The Holmberg Vacuum Vapor Steam Trap, attached to any single pipe steam job, will eject all the air. Save 30% in fuel, and increase the efficiency 30%.

Capacity of each Trap, One Thousand Feet. No other specialties required. Order from your jobber, or direct from factory. Send for particulars.

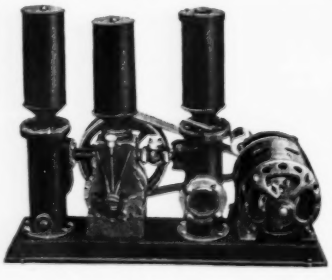
The Holmberg Steam Trap Co.,

Lindsborg, Kansas

THE BRUNSWICK-BALKE-COLLENDER CO'S
WHALE-BONE-ITE
REG. U.S. PAT. OFFICE
CLOSET SEATS
THE EFFICIENT CLOSET SEAT
HEAVY COVERING ASSURES LIFE-LONG SERVICE — ACID-PROOF — IMPERVIOUS — STANDS ABUSE LIKE A BOWLING BALL — CONCEALED HINGES — INDISPUTABLE QUALITY
RECOMMEND THIS PROFIT MAKER
ASK YOUR JOBBER OR SEAT DEPT.
THE BRUNSWICK-BALKE-COLLENDER CO.
623 SO. WABASH AVE. CHICAGO

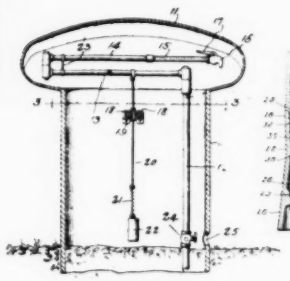
Vapor-Vacuum Heating
Trade Mark Registered
Kriebel System
Guaranteed to reduce coal bills 25%. In many instances it has effected a saving of 33⅓%.
Prof. Jones, Dean of Yale College, writes in part:
"After a year's trial, and particularly since the recent period of cold weather, I want to express my satisfaction with the way in which your system works. I have no trouble in keeping my home at a normal temperature of 70 degrees, even if the thermometer outside registers zero or below."
Every Kriebel System you install adds another name to your list of satisfied customers.
Write for booklet describing System
VAPOR-VACUUM HEATING CO.
Otis Bldg. PHILADELPHIA, PA.
101 Park Ave. NEW YORK

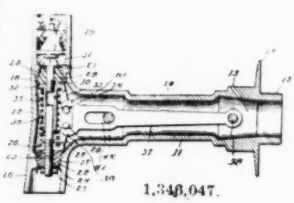
INBRACO
BALL COCKS
FLUSH VALVES
TANK TRIMMINGS
THE INDIANA BRASS CO.
FRANKFORT, INDIANA


A VACUUM pump which will maintain 20 inch vacuum and discharge against 20 pounds boiler pressure.
Simple, sturdy, silent.
Bulletin 3-C describes it.
THOMPSON MANUFACTURING CO.
DES MOINES, IOWA

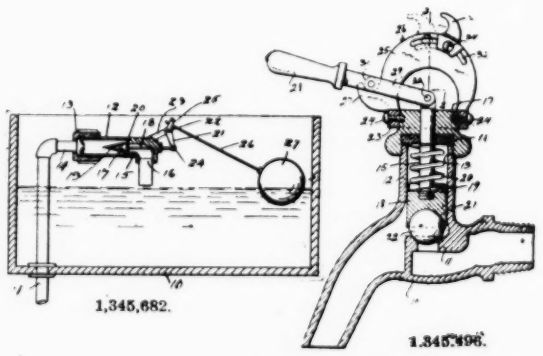
nected to the shield in alinement with the burner tube, a handle on said pipe and means to introduce a supply of air and gas to the burner tube through the pipe.

1,345,482. Water Station. Frederick W. Davis, Dayton, Ohio. A device of the character described including a casing provided with a canopy having its intermediate portion spaced upwardly from the adjacent portion of the casing thereby forming openings on opposite sides of the casing, a water supply pipe, a discharge pipe in communication with said water supply pipe, means for controlling the flow of water through the discharge pipe, and means for normally holding the discharge pipe beneath said canopy.


1,345,482.


1,346,047.

1,346,047. Combination Drinking Fountain and Faucet. Arthur B. Nafziger, Odessa, Wash. A device of the character described comprising a hollow body formed of substantially T-shape and including a shank portion and a head portion, the lower end of said head portion being provided with a valve seat and constituting a faucet discharge, a cup connected with the upper end of said head portion and provided with a valve seat, a valve disposed within each valve seat and normally closing the same, a yoke connected with each valve and provided at its inner end with a transverse lug, a lever disposed longitudinally within said shank portion and pivoted at one end, a fork on the other end of said lever having arms engaging said lugs, and means for moving said lever laterally whereby to unseat a selected one of said valves.


1,345,682.

1,345,496.

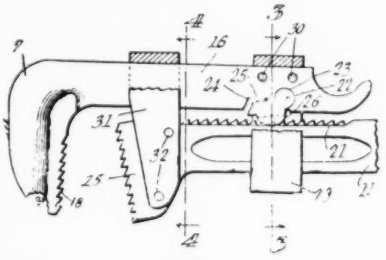
1,345,682. Valve. William Le Francois, Pawtucket, R. I. A ball cock comprising a valve casing having a pressure inlet opening a seat and a discharge opening, and endwise movable valve in said casing having a seat portion, a conically-shaped end member on said seat portion extending toward the entering pressure fluid and of a length approximately two and one-half times the diameter of said seat portion to reduce the operating resistance of said valve when moved against the pressure, a stem on said valve, and a lever arm pivotally connected between its ends to said casing and having one end pivotally connected with said stem to positively control both the opening and closing movements of said valve.

1,345,496. Adjustable Spigot or Faucet. John M. Keeler.

New Brighton, Pa., assignor of one-half to Charles R. Welsh, New Brighton, Pa. A faucet having a body formed with an upwardly extending chamber and with a seat below said chamber, a bonnet engaging the top of said chamber, a valve stem extending through the bonnet and carrying a valve at its lower end coacting with the seat, a compression spring disposed in the chamber and urging the valve to a closed position, a vertically disposed cam mounted upon the bonnet and arching over the stem, the cam having an edge eccentric to the upper end of the stem, and a handle pivoted to the stem for movement in a vertical plane and having a member thereon engaging the edge face of the cam.

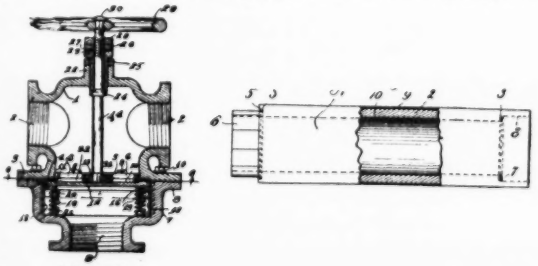
Heating Department.

1,345,983. Ratchet Pipe Wrench. William E. Bell, Tulsa, Okla., assignor to the Bell Wrench Co., Tulsa, Okla. A wrench comprising a fixed jaw and shank, the latter having its upper edge provided with ratchet teeth and shoulders at either side of the teeth, a movable jaw having a shank, means for movably connecting the shanks, the shank of the movable jaw being recessed at its bottom edge and a spring actuated pawl pivoted in the recess to engage the ratchet teeth and formed with means to engage the smooth walls of the shoulders whereby to raise the pawl from engagement with the teeth and permit free sliding movement of the movable jaw relative to the fixed jaw with the engaging means of the pawl moving along said walls.



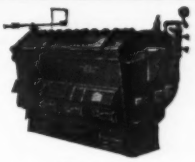
1,345,983.

1,345,382. Valve. Alexander McKibbin, Chicago, Ill. The combination of a valve casing having an inlet and an outlet, and a perforated partition between the inlet and outlet, a packing disk bearing against the partition and having perforations adapted to register with the perforations of the partition, a valve disk provided with perforation therein and having means at the exterior of the casing for operating the valve disk to control the passage of fluid through the perforations, a ring engaging the valve disk, means for resiliently pressing the ring against the valve disk so as to maintain the packing disk between the partition and the valve disk under sufficient pressure to effect a tight joint.



1,345,382.

1,345,423. Sectional Wooden Pipe Covering. Charles S. Waldo, Brookline, Mass., assignor to Waldo Brothers, Incorporated, Boston, Mass., a corporation of Massachusetts. Sectional wooden pipe covering formed of staves comprising means embedded in the ends of the staves of a section for fastening the staves of the section together transversely.

ECONOMY  EFFICIENCY

This is a
Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler
Saves Fuel Labor

Manufactured only by
PIERCE, BUTLER & PIERCE MANUFACTURING CORP.
Brooklyn Boston Worcester — NEW YORK Detroit Syracuse — Philadelphia Baltimore Washington

The Hessler
Adjustable
Plumbers' Roof Flange

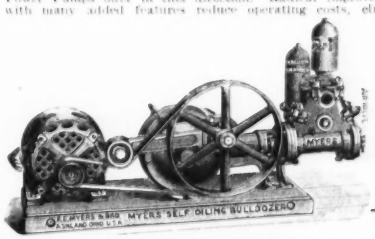
It is the best one. Write for prices, to nearest jobber or to

H. E. HESSLER CO.
Syracuse, N. Y

Former manufacturer of the McGuire

MYERS SELF-OILING POWER PUMPS

If improved service in obtaining your water is worth considering, you will appreciate what the Myers Self-Oiling Bulldozer Power Pumps offer in this direction. Radical improvements throughout with many added features reduce operating costs, eliminate accidents and breakage, permit operation at high speed or against heavy pressure, and increase capacity. Let us send catalog and quote.



F. E. MYERS & BRO., Ashland, Ohio

FOR lasting quality and true capacity use *"KOVEN"* Pure Iron, Double Row Riveted, Galvanized Range Boilers, or *NACO* Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

L. O. KOVEN & BRO.
50 CLIFF STREET NEW YORK

Classified Advertisements

The charge for advertisements under this heading is 6 cents a word, including heading and address; $1.00 minimum. To insure insertion, copy and remittance should reach us by Wednesday morning.

Situations Open

WANTED—SALESMAN TO SELL plumbing goods in south on commission basis. When answering, give particulars. Address 163, "Domestic Engineering," Chicago. 7-24

WANTED—ADVERTISING MAN FOR catalog, house organ, direct-by-mail and trade paper work, by large manufacturer and jobber of plumbing specialties. We are looking for a man who has integrity, loyalty, sales experience, advertising judgment and some knowledge of plumbing lines. Salary $200-$350. Genuine opportunity with progressive management. Middle Western location. Give full details and samples of work with first letter. Address 164, "Domestic Engineering," Chicago. 7-24

WANTED—GOOD PLUMBER FOR country shop. Steady work the year around. Good wages. Address Paul Groeschel, Marshall, Mo. 7-24

WANTED—SALESMEN NOW CALLING on plumbers to carry brass goods as side line. Principal territories open south, west and middle west. Good commissions. Address 166, "Domestic Engineering," Chicago. 7-24-31

SALESMAN—HIGHEST GRADE BRASS goods for plumbing trade, to be carried as side line in Illinois and Iowa. Liberal commissions. Advise present territory and details. Applications confidential. Address 165, "Domestic Engineering," Chicago. 7-24

WANTED—PLUMBER OR FIRST class experienced helper. Steady work for a competent man. Monroe Plumbing & Heating Co., Monroe, Wis.

Situations Wanted

FIRST CLASS PLUMBER, A-1 LEAD worker wishes steady situation. Will go anywhere in United States. Plumber, 604 Calhoun Ave., Ft. Worth, Texas. 7-24

THOROUGHLY EXPERIENCED HEATing man. Has full power equipment and tools to handle large jobs. Now employed. Will be ready to work after August 15. Nothing but large work considered. Address 167, "Domestic Engineering," Chicago. 7-24—8-14

For Sale

FOR SALE—PLUMBING AND HEATing shop in Southern Illinois coal mining district. Population 15,000. Stock will inventory about $3,000. Good opening for warm air furnaces. For particulars write Greve & Co., Mt. Carmel, Ill. 7-24-31

FOR SALE—CLOW GAS STEAM RADIation, in use two months. For price and sizes write Brunner Plumbing Co., Alton, Ill. 7-24-31

FOR SALE CHEAP—COMPLETE OUTfit plumber and steamfitter's tools including one Forbes bench machine. Cuts 1½ in. to 4 in. Retired from business. Address J. W. Wilson, 202 N. Washington St., Valparaiso, Ind. 7-17-24

FOR SALE — WELL ESTABLISHED hardware, plumbing and heating business. Located in rich dairy district of northern Illinois. 45 miles from Chicago. Last year's business over $40,000. An exceptional opportunity for a couple of hustlers. Invoice about $10,000. Tools and fixtures $2,000. Address 161, "Domestic Engineering," Chicago. 7-10-24

FOR SALE—PLUMBING AND HEATing business. Live town, northern Indiana. Population 10,000. Retiring. Established 1882. Stock can be reduced to suit purchaser. Address 162, "Domestic Engineering," Chicago. 7-17-8-7

Miscellaneous

TIME SHEETS, JOB TICKETS, ESTImating blanks, illustrated stationery, blotters, etc. For plumbers. Reasonable. Send for catalog and price list. Prompt service. P. Fink & Sons, 56 N. 7th St., Philadelphia, Pa. 11-22 tf

FELT
FOR TECHNICAL PURPOSES. PLUMBers and steamfitters. Let us solve your Felt problems for you. Address FELT, Postoffice Box 6, Milwaukee, Wis. 7-17-24

Emmet-Mackay Co.

Heating, Ventilating, Power and Combustion Engineering.

Advice, plans and specifications for the Heating and Piping Contractor on old or new work.

Room 614, 333 S. Dearborn St.
Chicago

Phone Wabash 4773

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

ENGLISH CANADIAN, KNOWING THE French language thoroughly, with established headquarters in Montreal, desires to handle plumbing, heating, ventilating, electrical lines, vacuum cleaning and farm lighting systems, etc., as manufacturers' agents for American firms. Controls trade in Canada, east of Toronto. Address 134, "Domestic Engineering," Chicago. 5-29 tf

1½ x ¾
RED. ELLS

BIN LABELS

For water, gas and steam. Over 10,000 different kinds. Send for samples.

Send for free Booklet "How to Systematize the Stock Room and Build Bin Racks."

Haddon Bin Label Co.
Haddon Heights, N. J.

Government Proposals

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., July 9, 1920.—Sealed proposals will be opened in this office at 3 p. m., August 6, 1920; for plumbing repairs at the United States Post Office, Bloomington, Illinois, in accordance with the drawing and specification, copies of which may be had at this office or at the office of the Custodian at Bloomington, Ill., in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 7-17-24

TREASURY DEPARTMENT, SUPERvising Architect's Office, Washington, D. C., July 19, 1920.—Sealed proposals will be opened in this office at 3 p. m., August 16, 1920, for remodeling boiler plant and power house, etc., at the U. S. Sanatorium, Fort Stanton, N. Mex. Drawings and specifications may be obtained from the Custodian at Fort Stanton, N. Mex., or at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

Books for Your Trade Library.

JOHNSON'S HANDY MANUAL. By John W. Johnson. The author is a practical plumbing and heating man, having spent many years in workshops and has superintended the installation of plumbing and heating systems of all descriptions. Eight editions of this popular book have been exhausted. The ninth is just off the press. Size 4x6¾ in. 391 pages. Cloth. Price, $1.25.

SWIMMING POOLS. By John K. Allen and Alfred G. King. This book contains complete detailed information on designing, constructing, the mechanical installation and equipment of swimming pools, both large and small. Size 4½x6¾ in. 60 pages. Cloth. Price, 75 cents.

FIVE HUNDRED PLAIN ANSWERS TO DIRECT QUESTIONS. By Alfred G. King. Answers all the questions on steam, hot water, vapor and vacuum heating that would be asked by the steamfitter or heating contractor. Rules, data, tables and descriptive methods are given, together with much detailed information. May be used as a text or reference book. Invaluable for those preparing for examinations. Size 6x9 in. 214 pages. Cloth. Price, $2.00.

BOOKKEEPING AND COST FINDING FOR THE PLUMBER. By Wesley A. Fink. Outlines a simple method of bookkeeping and cost finding easily adapted to your business. Tells how to open and close a set of books, gives concrete examples on figuring labor and material costs, overhead expense—in fact a complete system worked out in every detail. Size 4½x6¾ in. 128 pages. Cloth. Price, $1.00.

Domestic Engineering

407 S. Dearborn St., Chicago

"Pittsburgh"
AUTOMATIC GAS WATER HEATERS
PITTSBURG WATER HEATER COMPANY - - - PITTSBURGH, PA.